Science Studies Opens the Black Box
Spring School of Science Studies Proceedings

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Prague 2006

This book has been published by the National Contact Centre – Women and Science of the Institute of Sociology, Academy of Sciences of the Czech Republic thanks to the financial support of the Ministry of Education, Youth and Sports under the EUPRO programme (1P OK 459).

The Spring School of Science Studies took part thanks to the support of the British Council in Prague. We would also like to thank the University of Lancaster, particularly the Centre for Science Studies and the Institute of Sociology, for their support and help.

ISBN 80-7330-083-4

To Maureen McNeil

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Introduction

In March 2005, the first Spring School of Science Studies was held in the Czech Republic. The four-day event attracted people from various fields and enabled them both to deepen their knowledge and to encounter concepts and ideas that may inspire their own work. The event was unique in itself and we would like to take this opportunity to introduce it via the texts in this book.

Let us first introduce the broader background and paths that lead us to organize the Spring School of Science Studies in Prague. In the context of the Czech academic community we felt there is minimal critical discussion and problematisation of the points of departure and creation of scientific investigation and practice, and the existing attempts at discussion are scarce and fragmented. To be able to open up these previously underexplored issues we benefited from the supportive and friendly environment of the National Contact Centre – Women in Science, where we both work as well as strong support from the British Council in Prague.

The National Contact Centre – Women and Science aims to contribute to shaping gender discourse in science, especially with respect to the position of women in science. It also functions as a place for various opinions and concepts to meet at the crossroad of scientific research and gender. In the course of the existence of the Centre, we have begun to reflect more and more on the need for a broader background to better understand the position of women within scientific fields in order to create appropriate strategies that will correspond to their experiences. We have felt the need to understand and reflect on our position as well. The issue of how to contribute to achieving gender equality in science is inseparable from the concerns about how knowledge and power relations in science are produced and reproduced and how the gender identity of women scientists in research institutions is formed. This key objective of achieving change in the current arrangement of power relations in the sciences was the main motivation for us to incorporate the issue of knowledge construction and production into the activities of our Centre. From our perspective it is becoming more and more apparent that the activism and practical assistance the Centre provides are firmly anchored in the questions posed by (feminist) science studies. With this in mind, we organised the Spring School.

This publication aims to present the outcomes of the event. During the event, speeches were given by lecturers from the Centre of Science Studies at Lancaster University Maureen McNeil, John Law and Vicky Singleton and Zdeněk Konopásek from the Centre for Theoretical Study and Faculty of Social Sciences, Masaryk University and presentations by postgraduate students or postdoctoral fellows from the Centre of Science Studies (Lancaster University) and PhD candidates conducting their research in various institutions in the Czech Republic. The Centre for Science Studies in Lancaster is one of the best centres in the UK (in 2001, the Centre was part of the Research Assessment Exercise and received a 6* rating, which is the highest available category) focusing on interdisciplinary research within and across the boundaries of science, technology, and public policy. In their work, the members of the Centre problematise the construction of scientific knowledge and expert authority. They use interdisciplinary and innovative approaches including feminist STS, actor-network theory (and after), the cultural analysis of science, postcolonial technoscience studies, and the analysis of human-machine interactions.

In addition to talks by lecturers, the main part of the event consisted of the papers and discussion by students and young researchers. Most of the papers by students and postdoctoral fellows were short versions of their current research or PhD thesis. We welcomed the idea of discussing papers in various stages of completion, both finished research as well as papers in progress. This mixture of "readiness" could help create an inspirational environment for some and provide valuable reflection for the others.

Having encountered so many concepts, theories and approaches as presented during this event, one may seem lost in the probably largely unknown field of Science and Technology Studies (STS) in the Czech Republic. However, similarities and affinities have arisen between papers presented during the Spring School. The book is structured around the specific fields or approaches adopted in the texts. However, we did not intend to build any kind of borders between the ideas and concepts opened up in the writings below. The five chapters herein each express a strong interest in a specific problem or concept.

As mentioned above, the Spring School was dedicated to various issues of interest to the discipline of STS. Although we do not wish to exclude any issue in advance, there is specific interest in the connections of technology as such to lives of humans as well as non-humans. In other words, many ideas in many presented papers were closely related to the questions of humanity, its components, characters and ways of agency.
In the papers in the first section called Technologies of the future and its present perception, the authors are concerned about technology and its implications for the social life of humans. An excursion to the philosophy of science is provided by Denisa Kera. The first paper in this section *Telling tales of reproduction and technoscience* takes us into the world of reproductive technology. The author, Maureen McNeil comes strongly not only from STS but also from feminist positions. She questions various popular personal narratives about reproduction in the mass media during last decades and again, strongly connects technology and its "life" with life of human actors. The next paper *Designing the future: fables from the mobile telecoms industry* introduces ethnographical work by Laura Watts, who researched a mobile telecom industry in relation to the future as the topic. "What can be made, what will be made, what will sell?" asks Watts. She questions not only what futures are being made but also those futures that are kept silent, and how. Asking how is one of the most

important approaches STS is concerned with. How things, humans, relations and so on are created and creating, maintained and maintaining or untied and untying as well as how the actor moves in and outside the network, are at the centre of this field. In the paper by Denisa Kera *Software and cosmopolitics: code as the language of the new Constitution*, we can read about the new Constitution based on codes that are according to the author, the language of today's world. This resonates with Watts' paper in the idea of a fluid future that is never stable and final but rather transient and full of other possibilities.

Questioning the global and local contexts with respect to motion, change or stability definitely belongs to the field of Science and Technology Studies. In this section called Global, local, we would like to introduce two papers concerned with international issues and issues related to the politics of the European Union. The first paper *Disaster in agriculture: or foot and mouth mobilities* is devoted to the problematic of the foot and mouth disease, which infected British herds of cows in the last decade. John Law questions the framing of "normal accidents" within the British agricultural system. In a more general perspective, he presents the agricultural system as a set of flows where ruptures may cause catastrophic and large-scale impacts. In relation to the second paper, written by Tereza Stöckelová titled *Coexistence between GM and non-GM crops: contested political geographies of Europe*, we can see one more aspect of this section: emphasis on the controversy existing within and across seemingly similar domains and spheres. Stöckelová focuses on the controversy over genetically modified organisms in Europe and points out (among other things) the importance of "the political" in "the scientific". Both papers discuss the levels and spheres of power in relation to the methods of STS and reflect upon the fact that things co-exist as actors within a broad network of other actors and that to present them as final and clear solutions may cause difficulties and change their context. By stressing issues and concepts like these, the authors point out to the strong intertwining of science and politics and the problem of pure and stable categories and expertise.

One of the main issues raised by Science and Technology Studies is the border created between the expert and non-expert knowledge and especially the power to use this expertise/non-expertise. Themes closely related to these issues are connections of everyday lives with agency as well as definitions of normativity and proper action. Who defines and who gets defined, how we act and from which positions and what kind of instruments are we, from our position, allowed to use. These questions are opened in the writings of Anne Rudolph and Vicky Singleton in the third section called Politics in Everyday Life: Normativity and Agency. Anne Rudolph writes in the paper *Is there a dent in identities? Exploring risk perceptions of female-to-female transmission of sexually transmitted infections* on the topic of dent identities in connection with sexually transmitted diseases and questions the interlink of risk construction and construction of an identity. Though her text reflects only preliminary steps in her Ph.D. research and mostly introduces her plans and intentions for the future, it can serve as the source of inspiration for other interested people. Moreover, Rudolph and her text perfectly realises the original idea of the Spring School: to connect people from various approaches who use STS in some way in their work and to present papers at different stages of completion. Both of the authors in these sections base their arguments, besides the STS background, on feminist theories as well although Singleton focuses more on STS. In her paper *Resuscitating citizens: defibrillators, cardio-pulmonary resuscitation and caring* she poses a very simple but often neglected question: who is and who is not an expert and how we approach expertise from an everyday life position. Using the example of the British Community Public Health Initiative and its implementations, she reveals the practices of creating positions of power and knowledge and empowerment of individuals in large rural communities.

In the Actor Network Theory that is used in the field of STS, the human body is one of the actors in the network that interacts with other non-human actors. Papers included in the section Performing Bodies are concerned with the body in different contexts. Dawn Goodwin in her paper *Refashioning bodies, reshaping agency* writes on an anaesthetized body. Reffering to Haraway she conceptualises the patient as a cyborg, as a mixture of human and technological components. The aim of her paper is to reconsider the characteristics of agency and how an unconscious body might "resist" or inform a doctor's interpretation. Jordi Sanz Porras in his paper *Following "morbid obesity" beyond the operation room: mundane practices and the ontological politics of care* builds upon medical discourse (bariatric surgery). Medical intervention serves as a departure point of his research. He is interested in what happens with morbid obesity after leaving the hospital. For those who are not familiar with STS we would recommend beginning with this paper. The paper is interspersed with biographical notes in which he describes his "meeting" with the STS approach. His personal input: feelings, experiences, his searching makes visible the process of doing his research. The last paper in this section *Notes on social life of corpses* is written by Majda Rajčanová. She presents part of her research on the dead human body and her research question comes from her interest in what the dead human body is. She presents some outputs of her ethnographic work focusing on the path of the dead body from a hospital ward to the crematorium.

In the last section Locating Expertise, the author Karen Kapusta Pofahl writes on *Personal, political, academic: the politics of fieldwork and my brush with Czech media stardom.* Kapusta-Pofahl is a PhD candidate at the University of Minnesota who has been recently conducting her research and living in the Czech Republic. Kapusta-Pofahl conducts ethnographic research on the production and use of expert knowledge in the field of gender studies in the Czech Republic. Her paper differs from the others in that she does not use the STS approach. In her text, she reflects on the research process and especially on the position of the ethnographer while using Collins' concept of "an outsider within". She positions herself in the field of her study (the Czech gender community) and discusses what it means to be considered an expert on Czech feminism by the media.

By publishing this book, we would like to mediate the topics presented and discussed at the Spring School of Science Studies in Prague. We tried to open up concepts and issues that are often put aside in the Czech context. Nonetheless, we feel lots of issues remained untouched and await further openings.

10.9.2005

Technologies of the Future and its Present Perception

Telling tales of reproduction and technoscience

Maureen McNeil

This paper examines popular personal narratives about reproduction that have appeared in the mass media in the UK and North America in recent years. These stories are linked to the development of new reproductive technologies in these settings and analysed through a consideration of the development of forms of ‘intimate citizenship’, with particular reference to the work of Ken Plummer (1995) and Lauren Berlant (1997). A set of arguments are developed regarding the resilience, proliferation and differentiation of this popular narrative form into the early twenty-first century. The article finishes with some suggestions about the significance of these patterns.

Maureen McNeil

Telling tales of reproduction and technoscience

“Making babies is not rocket science, though doctors would like us to think so.”

(Jeanette Winterson, 2001)

Introduction

Despite Jeanette Winterson’s misgivings, there is a sense in which reproductive technoscience has been the ‘rocket science’ of the late twentieth and early twenty-first centuries. It has captured the popular imagination and dominated the mass media in the recent period just as rocket science did in the 1960s. This article is concerned with the generation and circulation of stories around and about this technoscience.

Over a decade ago I set out to examine the popular personal narratives associated with the emergence of the then so-called new reproductive technologies (NRT) (McNeil 1993). This was a way of getting some purchase both on what was happening in and around these technologies and on the developing feminist debates concerning them. The pivot of my analysis was the stark, deeply personal, but highly formulaic ‘I can’t have a baby’ stories which had been linked to these technologies, particularly through mass media representations in the countries in which I lived during the late 1980s and 1990s – Britain, Canada and the United States. I synthesised a generic version as follows:

I can’t have a baby. Like many of the heterosexual, middle-class (in origin or in positioning), white women of my age group in the Western industrial world, I moved through my 20s concerned with contraception and avoiding pregnancy. Financial independence and birth control were to be my tickets to freedom and I invested in both early and completely. As I moved into my 30s, I began to think about having children. The past ten years or so have brought me to a gradual and sometimes painful confrontation with the fact that I can’t have children. As time slips away, it seems increasingly unlikely that I’ll ever become a mother.

These were narratives about women’s desires and expectations. The focus on women’s stories was strategic: to contest the silencing of women (Haraway 1991: 311-2; Taylor 1993: 609), the pushing of women out of the picture (Petchesky 1987; Spallone 1993: 207; Stabile 1994: 68-98), what Carol A. Stabile labels ‘the visual and symbolic exclusion of women’ (Stabile 1994: 89) in recent foetal-centred representations of reproduction. Foregrounding women’s stories was, in part, a protest against this trend. However, it was also something of a reaction to both uncritical celebrations of NRT and to some negative feminist responses to them. There had been considerable attention given to these technologies as the realisation of male dreams of reproductive powers by both advocates and critics (for example, Arditti, Duelli Klein and Minden 1984). In contrast, I turned my attention to women's narratives about their reproductive desires and their dreams regarding reproductive futures. This re-oriented the investigation, but it also complicated the picture. It forced me to acknowledge the ways in which these technologies were about *dreams and desires* as well as *oppression*, and about *women's* desires as well as those of *male doctors and scientists*. But, it was also my way of encouraging reflection about the desires and aspirations of women (including feminists): How are they shaped? When are they denied? What are the relationships between women's needs and desires and the development of NRT?

In a number of talks and in a written version, I played rhetorically with various versions of the 'I can't have a baby' story to explore the significance and resonances of its various forms and manifestations. My rhetorical experimentation was designed to investigate how these narratives worked and to encourage reflection about contemporary procreative stories (see also Franklin 1990, 1992; McNeil and Franklin 1993). The synthetic narrative used above exemplifies my rhetorical experimentation. Styled after widely circulated media stories that have become familiar in the Western world since the mid 1980s, it differed from them through the explicit presentation of the subject/narrator's position in relation to key social divisions and locators (e.g. class, 'race' or ethnicity, geographical location etc). Despite their highly personalised and often intimate forms, most media stories of new reproductive technologies projected the voice of 'everywoman' – with little or no allusion to these crucial social divisions and markers. This obscured social patterns around access to these technologies and denied the significance of these divisions in their development. Moreover, the presentation of women speaking of their reproductive difficulties and aspirations as 'everywoman' evoked considerable empathy, inviting high levels of identification. This has been a crucial feature of this popular Western testimonial form in the last two decades.

In the late 1980s and early 1990s, I argued that such stories (in either first or third person or in the couple's versions) constituted a distinctive genre of the Western world at the time. I suggested that perhaps no other genre of narrative (except possibly, far more ambiguously, those of AIDS sufferers) typified introductions to the challenges associated with high-technology science and medicine. Like the narratives of AIDS sufferers, these were moral tales of the high technology, late twentieth-century Western world. They were stories of a new kind of technological prowess comparable to that associated with rocket science during the peak of the space race.

Fascinated by the apparent predictability and power of these stories, I used rhetorical moves in talks and in a written version (McNeil 1993) to explore these features. These narratives were predictable in at least two respects. First, the form of these accounts was standardised, whatever their specificities. Each account included (sometimes with a brief background): confrontation with difficulty in reproducing (the problem), some exposition of suffering caused thereby, the solution (generally through scientific medicine), followed by happy resolution (usually the birth of a child). Despite their ostensibly personal form, these narratives were highly formulaic. Moreover they were predictable in the further sense that such narratives became the ubiquitous framing devices for media representations (including news items) on new reproductive technologies in the 1980s and 1990s. For example, the media coverage of the Report of the Canadian Royal Commission on New Reproductive Technologies, *Proceed with Care* (1993), the product of the most extensive national investigation on this topic ever conducted, exemplified this pattern. On the eve of the release of the Report in October 1993, producing a typical specimen of the genre, the CBC (Canadian Broadcasting Commission) Radio news opened with the story of a couple who were apparently infertile and who were looking to NRT to solve this problem as the lead-in to their account of the Report.

There is much more that could be said about my earlier exploration, but my interest here is with subsequent developments in and around these narratives.

So I will consider two examples of recent reproductive narratives that appear as a newspaper diary entry and a short newspaper magazine report.

Two contemporary tales of reproduction

Leah Wild's IVF Diary: The final IVF diary entry sees the twins surrounded by people in white coats.

It took 10 people to make my babies. The Professor of the Assisted Conception Unit, the Pre-implantation Genetic Diagnosis (PGD) co-ordinator, the embryologist, two cytogeneticists, the team of four doctors specialised in reproductive medicine, the consultant obstetrician, and my boyfriend who provided the basic material. Just as the NHS advertising campaign says, everybody's life depends upon more than a couple of responsible parents.

In 2000-2001, the *Guardian*, one of Britain's widest circulating 'quality' newspapers, carried occasional diary columns in its tabloid-size section (called *G2*). Intermittently, a set of writers provided first-person accounts of a variety of experiences including farm life etc. Between 2000 and March 2001, Leah Wild contributed to this series with her 'IVF Diary'. In irregular instalments she presented a sequential account of her difficulties around reproduction (related to a foetal genetic disorder she carried), the overcoming of this barrier to reproduction through technoscientific intervention (in the form of Pre-implantation Genetic Diagnosis and In Vitro Fertilisation), pregnancy, and birth.

Wild's 'IVF Diary', stretches and segments the standard 'I can't have a baby' narrative in accordance with the requirements of the *Guardian* occasional diary format, as she provides a 'blow-by-blow' account of her reproductive problems, medical treatment, pregnancy, and birth. The last entry, which is my main focus here, provides the resolution and ending of the story. The opening sentence of this article starkly registers the complexity of early twenty-first century, high-technology 'assisted reproduction': It took 10 people to make my babies. Wild's narrative is inflected by an apparently progressive attitude to social change, which was likely to appeal to the *Guardian*'s liberal-left readership. Her insistence that children are social products and collective responsibilities, and hints that the traditional nuclear family may be an outmoded institution in the contemporary British setting, provide her leitmotif:

> My boyfriend and I are the babies' parents... We also happen to be their biological parents. Although we'd still be their mum and dad even if we weren't. But our babies have another set of adults responsible for producing them – the PGD medical team.

Although this diary ends, in accordance with the convention of such reproductive narratives, in the euphoria surrounding the joyful birth of, in this case, two healthy babies, Wild does signal that the story does not end here:

> It took 10 people to make my children. It will take far more than that to raise them.

Despite its radical gloss, its gestural resistance against conventional closure, and its production in instalments, with attention to detail, Wild's diary conforms to the pattern of the established 'I can't have a baby' narratives. Moreover, it extends and intensifies the conventional celebration of the achievements of technoscience characteristic of such stories. There is a fulsome acknowledgement of the scientific-medical team and of the technological procedure employed in the reproduction. Indeed, she describes her children as "the *product* of PGD" [my emphasis]. In fact, Leah praises the medical-scientific team, not only as "scientific", but also as "social pioneers", implying that they are in the vanguard in breaking the conservative stranglehold of the nuclear family. Leah also acknowledges the contribution of her boyfriend – the genetic father – in the production of the twins. Nevertheless, a notable feature of this narrative is that, despite its autobiographical form, the account effectively erases Wild's own contribution in the production of her twins. The denial of her own agency undermines the autobiographical form. In this respect, Wild's narrative recapitulates the erasure of women in representations of reproduction, which, as noted above, feminists had criticised in the 1980s and early 1990s.

‘Amanda’s story’ (in Williams 2001: 39-40)

> Amanda Pearson, 34, and her husband, Colin, from Ashford, Kent, endured eight years of repeated miscarriages. Finally, they discovered that Amanda had a genetic translocation, where part of one chromosome becomes attached to another, and that pre-implantation genetic diagnosis was her only hope. Amanda and Colin are now the delighted parents of eight-month-old Joshua.

Whereas Leah Wild’s diary extends and inflects the ‘classic’ ‘I can’t have a baby’ narrative form, ‘Amanda’s story’ provides, in its opening three sentences, a condensed representation of this genre. Appearing under this simple, personalised title, this narrative literally frames an exposition of recent developments around genetic testing in the supplement of the *Mail on Sunday* – You magazine. In the opening three sentences all the elements of this reproductive narrative are laid out: the confrontation with a problem around reproduction, the medical-scientific diagnosis and solution, and the resolution of the problem through a joyful birth. What follows, in the rest of the column, is the elaboration of the details of this story, including information about the medical diagnosis and treatment. This includes the representation of this couple at the leading, testing edge of technological development. After initial diagnosis, they “were told that PGD could help, but that the technology was still being developed. So we waited for two long years.” Reference is made to the cost and anxiety associated with the PGD procedures and to the couple’s prospects for future reproduction: If we can’t have any more children, though, we will have to do the same again. But it would definitely be worth it.

My two examples are journalistic exemplifications of the ‘I can’t have a baby’ narratives discussed previously, with some distinguishing features. The first autobiographical account tells a reproductive story in instalments, the excerpt considered here being the last instalment. The second narrative appears as a framing ‘human interest’, third-person overview (peppered with direct quotations from the couple) of their problems and ultimate success in reproducing, which accompanies a more factual exposition of developments in new reproductive technologies for a popular readership. Nevertheless, as I have indicated, these are both exemplars of the genre of reproductive narrative identified above. True to this form, these are highly personal stories – ‘Leah Wild’s diary’ and ‘Amanda’s story’ – without any specification of social status and markers (class, ethnicity, etc), but which nevertheless claim a certain representativeness. Wild’s is not just her personal reproductive diary, it is an ‘*IVF*’ diary and Amanda’s story frames and highlights the need for the technological innovation presented in the article as a whole.

Assessing the significance of such narratives requires situating them in a broader historical and theoretical context. In the next section, I begin such assessment by locating these narratives in relation to research undertaken by Ken Plummer and Lauren Berlant.

Intimate citizenship and 'I can't have a baby' narratives

Western personal narratives about obstacles to reproduction can be related to the new modes of 'intimate citizenship' (Plummer 1995) and manifestations of the 'politics of intimacy' (Berlant 1997: 6) associated with the recent explosion of testimonial forms in public life in Britain and North America. This section of the article examines salient aspects of Ken Plummer's and Lauren Berlant's interpretations of these new forms of citizenship in the contemporary Western world and of the popular narratives with which they are associated. I bring Plummer's and Berlant's work into dialogue around their critical perspectives on emerging forms of the politics of intimacy to generate a synergy for my own analysis. Their research is used as a theoretical prism through which to view the development of 'I can't have a baby' narratives in the last decade or so. But I also use my own research to cast light on these new perspectives about recent forms of public life and their popular narratives. The next section begins with an exposition of Plummer's and Berlant's analyses of recent manifestations of the politics of intimacy. An exploratory triangulation between the work of these two critics and my own investigation frames the subsequent account of the three defining features/processes that have characterised the pattern in the popular circulation of the 'I can't have a baby' narratives during the past two decades or so: resilience, proliferation, and differentiation.

My initial interest in recent reproductive narratives was primarily in their social and political significance. Retrospectively, and particularly through the prism of recent research on public intimate narratives and for other reasons considered below, it has become easier to articulate their significance. Although such reproductive narratives are not necessarily *Sexual Stories* as designated in the title of Plummer's book, they are certainly akin to the "*personal experience narratives around the intimate*" (1995: 7) which he analyses in that text. Plummer's specific investigations were of coming-out, rape, and individual recovery narratives, but the reproductive stories with which I am concerned are, in many respects, similar to those he has investigated.

Aside from these commonalities, Plummer's broader project in that book also provides helpful parameters for my investigation. Two key concepts deriving from this are highly relevant for understanding recent reproductive narratives. These are his attempt to generate a 'sociology of stories' and his notion of 'intimate citizenship'. He explains that he is less concerned with "analysing the formal structure of stories or narratives... and more interested in inspecting the social role of stories: the ways they are produced, the ways they are read, the ways they perform in the wider social order, how they change, and their role in the political process" (ibid: 19). Plummer's larger project is one of aspiration rather than full realisation in this book, but in struggling towards the larger project he highlights:

- the importance of community – story interactions
- the need to understand community – story interactive *productivity* in its specificity
- the role of sexual or intimate stories in the formation and mobilisation of social/political groupings in the last decades of the twentieth century
- the crucial role of the mass media in the generation and circulation of these narratives and the need for attention to the specific media forms and their evolution
- the importance of these interactions (stories- community- media) in the construction of subjectivities/identities

These are the dimensions of his aspirations towards a 'sociology of stories' which seem most pertinent to recent reproductive narratives.

The conceptual hinge for Plummer's sociology of sexual stories is his notion of 'intimate citizenship'. He presents this term by establishing the context for the recent emergence of new forms of politics:

> What has become both visible and practical over the past two decades (although the roots go further back) is the creation of these new communities of discourse and dialogue championing rival languages, stories and identities which harbour the rights and responsibilities of being sexual, pursuing pleasures, possessing bodies, claiming visibility and creating new kinds of relationships...

He goes on to identify and label this: A new set of claims around the body, the relationship and sexuality are in the making. This new field of life politics I will call 'intimate citizenship' (ibid: 151). As my preceding account of recent reproductive narratives shows, these fit well into Plummer's 'new field of life politics'.

Lauren Berlant shares Plummer's concerns with the transmutation of citizenship and with the recent nationalist politics of intimacy' (1997: 6) which she contends came into dominance in the Reagan era in the United States. In *The Queen of America Goes to Washington City*: *Essays on Sex and Citizenship* (1997) she assembles selections from and reflections on her 'archive' (1997: 11-12) of Reaganite US popular culture that embody these new forms of public political life. Like Plummer, Berlant pursues popular narratives of contemporary citizenship and offers observations about the subjects at their centre. She posits that "citizen-victims" (1997: 1) are the dominating subjects on the recent US political landscape, that testimonials of pain are the pre-eminent political narratives, and she deplores the concomitant "cultural politics of pain" (Berlant 2000: 33; see also Berlant 1997). She situates this: I would like to connect it to something I call 'national sentimentality', that is, a liberal rhetoric of promise historically entitled in the United States, which avows that a nation can best be built across fields of social difference through channels of affective identification and empathy (2000: 34).

While Plummer sees both potential and danger in this new politics, Berlant is more unequivocally critical. Her research on recent testimonial forms is, in some respects, more generalised and, in others, more specific than Plummer's, and this contributes to their rather different political evaluations of 'intimate citizenship'. Berlant focuses exclusively on the United States. While Plummer sees his analysis of 'intimate citizenship' as pertaining most obviously to the United States, he ranges wider, including British (and possibly other) exemplifications. As indicated above, his study is oriented around three particular types of narratives (coming out, rape, and recovery) and he tracks the communities with which they are associated. Assessment of the orientations of these communities and their visions for change, leads him to distinguish amongst manifestations of the "politics of intimacy": from the conservative vision of individual transformation of the twelve-step programme (originally developed for dealing with alcohol addiction) to the more radical aspirations towards political change, which feminism and gay activism have sustained. Queen of America, by contrast, is focused on the Reaganite revolution and its impact on US culture. Berlant highlights the icons of "the foetus, the child and the immigrant" as the haunting figures of US politics from this period and offers detailed case studies of their construction/mobilisation. As Berlant sees it, the obsession with these pre-citizenry figures has resulted in the dominance of sentimentality in public culture and "a politics that abuses politics, made on behalf of a private life protected from the harsh realities of power" (1997: 2). Berlant concentrates on the dangers in the *forms and regimes of (apparent) truth and justice instituted* by the "politics of intimacy". She deplores the take-over of the public sphere by such a politics in the USA, identifying the way it "overorganise[s] the terms of public discussion about power, ethics and the nation" (1997: 8), precluding other political priorities.

Berlant's foregrounding of the iconic power of the child and the foetus goes some way in accounting for the purchase of reproductive narratives in the late twentieth and early twenty-first centuries. Moreover, in articles published since The Queen, she has delineated the features and mechanisms of recent sentimental politics which pivot around public personal testimony. This includes her acknowledgement that traditions of women's virtuous suffering in the family and feminist discourses of rights related to such discourses have been part of the structuring conditions for this new political culture. As she sees it, these are factors, which 'enabled the political consensus that situates narratives of trauma on the ethical high ground above interest politics' (2000: 34).

A distinctive facet of Berlant's take on the testimonial narratives associated with the politics of intimacy is her exposition of their legalistic regimes of truth. In a recent article, she highlights the appropriation of legal rhetoric and the production 'twistedly' of "the law's multiple genres – evidence, argument, and judgement" in such testimonials (2001: 42). Effectively she traces the emulation and condensation of legal modes in such popular forms of address, showing how they become surrogate legal technologies – "more eloquent than and superior to the law" (2000: 35). She ponders the mechanics of such testimony and the subject positions they offer: Mobilising the putative universality of pain and suffering the testimonial challenges you to be transformed by the knowledge of what you cannot feel directly. (2001: 44) Critically questioning the self-evidence and obviousness of such knowledge (2000: 35), she insists that "*psychic pain experienced by subordinated populations must be treated as ideology*, not as prelapsarian knowledge or a condensed comprehensive social theory" (2000: 42-3). Reparation for such pain should not be taken as the guarantor of justice in Berlant's estimation.

Bringing together Plummer's and Berlant's research around 'intimate citizenship' creates a rich theoretical reservoir for the following analysis of reproductive narratives in the last decade or so. Nevertheless, the discordance and tensions between their projects also merit attention. As I have hinted above, their methods and their political prognoses are quite different. The methodological core of Berlant's approach is detailed text and image analysis, while Plummer pursues his sociology of stories, explaining that he is "less concerned with analysing the formal structures of stories or narratives (as literary theory might)" (1995: 19). In relation to texts, Plummer's is a much more broad-brushed approach: he does cite and comment on specific texts but these are not detailed readings, he concentrates on his typology and mapping. It is not the workings of texts, so much as the activities and ideas of the communities, which enable their production, and of the audiences which consume them which interest him. Establishing that there is a productive cycle between communities and sexual stories which mass media forms have facilitated and realised, Plummer sketches the emergence of affiliated identities and social groups.

Plummer's and Berlant's projects are both normative, inspired by feminist, gay, and queer politics, but offering rather different prognoses concerning the flooding of the public domain by sexual stories. Plummer's tracking highlights specific types of testimonial narratives as positive – coming-out narratives and rape stories – associated with gay and feminist communities. His typology provides the basis for distinguishing between sexual stories that are oriented around political rather than individual change. Hence, he does not totally disavow the politics of intimacy. Berlant is more critical as she moves between textual readings (much more detailed than Plummer's), expositions of related regimes of truth, and her perceptions of the degeneration of the US political climate which she argues has been generated in its wake. Their different methodologies are entwined with these different political assessments. Plummer is interested in audiences/listeners as active agents in the making of stories. His optimism about the potential of sexual stories derives from his positive perspective on feminist and gay communities of the late twentieth century. Berlant sees texts (particularly the right-wing ones she analyses) as powerful, because of the discourses they mobilise and the regimes of truth they instantiate. She does not consider the agency of audiences: the implication is that powerful and popular discourses render them powerless. In a sense, the insightfulness of her readings mirrors the political power of the discourses she brings under critical scrutiny.

My brief discussion of Plummer's and Berlant's research concerning the politics of intimacy and the testimonial narratives through which it has been manifested provides a theoretical prism for my consideration of what has happened to 'I can't have a baby' stories since I first began to study these in the late 1980s. In the following sections of the article I examine the *resilience*, *proliferation*, and *differentiation* of these narratives over that period.

Resilience

As my examples suggest, the 'I can't have a baby' stories have proved to be a remarkably resilient narrative genre. In the countries in which I have resided for the last two decades (Britain, Canada and the United States), the media (including newspapers, magazines, television and film) have all circulated versions of this narrative. Narratives of women (or couples) who cannot have children, revealing their concomitant pain and suffering, and speaking of their attempts to solve this problem or third-person accounts of their plight have become classic tales of late twentieth and early twenty-first century Western life. I propose three reasons for the resilience of this narrative, which work out from the form, to the content, and then the context of the stories.

These stories embody a classic and simple form of salvation narrative, as my examples illustrate. 'Amanda's story', in this sense, is a succinct and classic instance. In Ken Plummer's terms, they "have their roots in classical stories of redemption and transformation" with "a move from suffering, secrecy, and often a felt sense of victimisation towards a major change" (1995: 50). The stark declarations concerning the problem of not being able to have a child, and the exposition of the pain this brings, engages the reader and viewer. There then follows an account of the quest for a solution, generally involving encounters with scientific medicine. The reader/viewer follows (often eagerly) this trajectory. The engagement with this quest sets up high expectations for the sought for resolution (hopefully) of the birth of a healthy baby. The simplicity of this narrative line and the intensity of its potential for identification account for the resilience of this story genre in the Western media during the last decade and a half.

A further feature of these stories which accounts for their resilience, is that, despite their generally highly personal nature, they are universalistic and involve no reflexivity about their specificity or context. As I indicated previously, they are spoken in the voice of everywoman, they presuppose and mobilise a seemingly universal desire to reproduce and register this as an apparent right. There is never any questioning of that desire or that right, nor any reflection about its location. In this respect, the declaration of pain and suffering becomes an unquestionable truth, a form of 'prelapsarian knowledge' (Berlant 2000: 42-3) which legitimates the claim that resources (usually linked with modern science and medicine) should be mobilised to realise the *right* to reproduce. The highly personalised narrative form makes it unquestionable, whilst its universalistic framing mobilises intense identification and sympathy. The intensely personalised form of these narratives and their power in evoking identification effectively fuses 'I' with everywoman, making these virtually unquestionable accounts.

As Berlant has established, the foetus and the child have been key figures within the evolving forms of the politics of intimacy in the Western world. The 'I can't have a baby' stories hone the political resonance of these figures. These stories revolve around the expressed desire for a child of 'one's own'. Marilyn Strathern has drawn attention to the significance of this trope from an anthropological perspective, referring to '[t]he colloquialism' as, "an interesting fusion of whom one identifies with and what one owns against the world, which points to desire or preference" (1992a: 25-6). She has designated as specifically 'Euro-American' "the widely shared cultural assumption that persons desire children of their own" (Strathern 1992b: 156). Strathern's anthropological identification specifies the context and denaturalises the truth claims circulated in these particular reproductive narratives. But it is also crucial that, as befits the recent politics of intimacy, these narratives render these not as expressions of desire but as claims based on rights. Hence, a further reason for the resilience of this narrative form is its rendering of this distinctive Euro-American cultural assumption into a plea for justice.

Finally, and rather more speculatively, I suggest that the resilience of this narrative form relates to its capacity for containment of broad anxieties about reproduction. These stories begin with a difficulty in reproducing and end with the resolution of this difficulty. It may not be too far-fetched to suggest that they can function as reassuring moral tales about a range of forms of reproduction – individual, social, and political. In this sense, these narratives are vehicles for airing, mediating, and containing anxieties about reproduction in the contemporary West. They reassure listeners and viewers that the Western world has the technology (in both the literal and metaphorical sense) to continue to reproduce itself (both literally and symbolically, individually and globally). In this respect their social and political role is similar to the spectacles associated with the space race. Moreover, the focus on these narratives may displace other less contained and more problematic stories about reproduction in the Western world, including those about child poverty (see Haraway 1996: 202-12).

Proliferation

It is not just the resilience of the 'I can't have a baby' narratives; it is their proliferation over the last few decades which has been so remarkable. More and more of these stories have been circulated and given wide public airing. This could be taken as an instance of the "discursive explosion" or "incitement to discourse" around sexuality that Michel Foucault identified:

> Western man has been drawn for three centuries to the task of telling everything concerning his sex;... There was installed ... an apparatus for producing an ever-greater quantity of discourse about sex, capable of functioning and taking effect in its very economy. (Foucault 1979: 23)

However, like Ken Plummer and others, I am suspicious of Foucault's sweeping assessment. Plummer observes:

> It is not the case that everything can now be said about sex [or indeed reproduction] ... Yet his [Foucault's] account neglects the rise of mass media in all its diverse forms, and it provides little space for the generation of particular kinds of stories at particular moments: it is all strangely undifferentiated. (Plummer 1995: 122-3) (my additions in brackets)

Like Plummer I maintain that *detail* and *specificity* are important here. This involves noting the growth in testimonial cultures, particularly in North America, but also in Britain, that have evoked the "narratives of intimate life" of the late twentieth century, which Plummer and Berlant have studied. As Plummer registers, the development of specific media forms appropriate for communicating such narratives is also important. This includes (to mention just some of the most obvious forms): TV and radio talk shows, 'docusoaps', and other forms of television, which 'expose' personal life. These have been extremely popular, distinctive media forms of the late twentieth and early twenty-first centuries, which entertain through the promise of personal revelation. They have also provided platforms for the airing of apparent injustices related to "the politics of intimacy". They have proved to be media forms highly appropriate for the production and circulation of 'I can't have a baby' narratives. So, for example, the 'show-down' on the Oprah Winfrey Show (March 2001) which featured two couples contesting custody of twins purchased through an internet deal is but one of countless examples of media generation, airing, and proliferation of these stories.

The generic personal revelation media programmes have not been the only disseminators of the reproductive stories considered here. As Amanda's story indicates, such narratives have sometimes provided the framing or structuring device or lead-ins for expositions about developments in reproductive technoscience for popular readerships and audiences. Indeed, it has become standard practice for television programmes about developments in biomedicine and technology to use these stories in this way. Such programmes often employ state-of-the-art visual technologies both to render visible body parts and processes previously inaccessible to the naked eye and/or the lay viewer. They also celebrate the achievements of contemporary biotechnology. In these high-technology presentations, as in the more prosaic newspaper exposition considered above ('Amanda's story'), personal narratives about reproductive difficulties provide the human-interest framing for such expositions. The Internet has become a further medium for the production and circulation of reproductive narratives. Sherry Turkle (1996: 26) notes that the use of the Internet has rendered the "computer an intimate machine", a vehicle for constructions and reconstructions of self (pp. 177-209). The Internet has been an important vehicle for the advertising of surrogate services and gamete exchange. Moreover, chat lines have been crucial. The Internet and talk shows are perhaps the prime contemporary media of the politics of intimacy and these have been important vehicles for the production and circulation of 'I can't have a baby' stories.

The development of appropriate media has not been the only factor in the proliferation of the reproductive narratives, which I have been tracing over the last decade. Plummer's commentary indicates that it is necessary to acknowledge and analyse specificity – the emergence of "particular kinds of stories, at particular moments". As Margarete Sandelowski (1993: 7) notes: Infertility became newsworthy in the 1980s. This brings us to another crucial condition for the proliferation of these narratives: the concerted excavation and generation of difficulties around human reproduction that has preoccupied Western science and medicine in the last few decades. The favoured term for reproductive technologies is now 'assisted reproduction', and more and more women and couples have been diagnosed as requiring technoscientific assistance. The elaboration of the ways in which reproduction can go wrong has made so-called 'natural reproduction' (that is, reproduction which does not require technoscientific intervention) exceptional. In a study of media representations of new reproductive technologies, Sarah Franklin observed that "the need for scientific assistance to human reproduction" (1993: 528) is now widely and insistently highlighted. With mounting concern about infertility in the Western world and media portrayals of conception as a remarkable achievement, Franklin explains that: "the necessity for technological assistance thus comes to be seen as product of nature itself" (1993: 40). It is in these circumstances, that the 'I can't have a baby' stories have proliferated: more and more women (and couples) are formulating and broadcasting their stories about difficulties having children. These stories beget more stories, media forms attuned to their resonance circulate these, and their dissemination confirms that reproduction without difficulties (particularly without technoscientific assistance) can no longer be presumed to be the norm.

Differentiation

Thus far I have been concerned with more-of-the-same patterns relating to the reproductive narratives that I have traced. Plummer refers to "*personal experience narratives around the intimate*" (1995: 7) as "proliferating stories, multiplying stories, dispersing stories" (1995: 78). My illustrative narratives hint that these stories can take different forms: diary documentation or stark factual reports in newspaper articles, but such narratives have also been structured into plays, films, radio and television soap-operas and many other forms. Moreover, disruptions of the established story line (reproductive problem - identification of technoscientific solution - resolution in birth of a child) including representations of unsuccessful medical/scientific procedures have become somewhat more common. In addition, there may be some warrant in extrapolating from my examples to observe that there has been a shift in the technoscientific pivot of these stories in the last few years. In the 1980s and 1990s, IVF was the procedure that provided the transformational element in the stories of reproduction. As the narratives considered here suggest, PGD (Pre-Implantation Genetic Diagnosis) is increasingly the technological focus of such stories.

In addition to these notable differences, there have been crucial patterns of differentiation emerging around and through these reproductive narratives during the last decade and a half. I use the term differentiation to highlight two inter-related processes occurring during this period. First, there has been a differentiation (in terms of the social identities) of the speakers of such narratives. Secondly, and more complexly, these stories themselves have become technologies for differentiation – fuelling controversy and inviting social/ethical adjudication. I consider each of these forms of differentiation in turn below.

When I first began analysing the 'I can't have a baby' stories, the homogeneity of the speakers was striking, although seldom noted. In the 1980s and early 1990s, generally it was white, (apparently) heterosexual, pre-menopausal, and relatively privileged women in the Western world who spoke publicly of the pain and problems involved in not being able to reproduce their 'own' children. In the last decade or so, a more diversified range of speakers have followed them into the public arena to air their pain and claim their rights to reproduce. The most prominent among these have been lesbian and lone women, gay men, and post-menopausal women.

In and of itself this constitutes a fascinating and complex pattern that requires detailed empirical tracing and scrutiny. This diversification has taken rather different trajectories in different national settings. This can be illustrated with reference to the claims of non-heterosexual-identified women regarding reproduction in the UK. Since the 1980s some women have sought to 'pass' as heterosexual in order to secure access to new reproductive technologies and treatment. The so-called 'Virgin Birth' controversy in Britain in 1991 centred on revelations about such attempted passing.

Controversy erupted when a press leak brought attention to women who were not in heterosexual relations (some of whom were lesbians) being given IVF treatment. This was a fascinating episode which highlighted the role of doctors as the gate-keepers to reproductive rights in Britain and ostensibly illegitimate claims to reproductive rights realised through passing. The controversy revealed the wide-spread expectation in Britain that these technologies should be used to bolster the traditional nuclear family and heterosexual relations.

While passing as heterosexual continues (with various degrees of success) amongst some women, 'out' lesbian women, lone mothers, and gay men have made more public claims to reproductive rights and access to reproductive technologies during the last decade. Although this has sometimes garnered condemnation, there have also been crucial productive (in the Foucauldian sense) dimensions to this contestation. So, for example, Mette Bryld (1991) maintains that the contestation of rights to new reproductive technology brought the first public acknowledgement of the figure of the lesbian in Denmark. As Bryld's argument illustrates, contestation over new reproductive technologies and 'I can't have a baby' narratives have been key elements in the evolution of identities and negotiations over citizenship in late twentieth-century Western states.

Once the monopoly of the voices of white, relatively well-off, heterosexual, pre-menopausal, Western women and couples was broken, the political dimensions of the 'I can't have a baby' story became more obvious. Whereas those traditionally assumed to be entitled to reproduce were not socially identified or identifiable, but spoke as 'everywoman' (or 'every heterosexual couple'), these new voices were publicly identified and labelled. When non-traditional agents began to add their voices to the choruses of those speaking of their pain in not being able to reproduce, they were clearly marked. Voiced by these marked citizens, 'I can't have a baby' stories came to be identified as political narratives.

This brings me to my second and related sense of the differentiation of these reproductive narratives. 'I can't have a baby' narratives have been extraordinarily effective vehicles for opening debates about reproductive rights and resources in the Western world. They have occasioned the claiming, clarifying, the developing, and contesting of forms of intimate citizenship in North America and Europe. In their wake have come calls for legal reform and regulation (for example, around the use of the sperm of deceased husbands), technoscientific development and experimentation (including the treatment of postmenopausal women to sustain pregnancy), as well as adjustments and innovations in commercial and social infrastructures (for example, in clinics for infertility treatment, regulative agencies – such as the HFEC (Human Fertility and Embryology Committee) in the UK and reproductive 'tourism').

These stories have foregrounded particular nubs of controversy about reproductive rights and resources. A very interesting mapping exercise could be undertaken which would reveal sometimes overlapping, sometimes distinctive, national patterns around these narratives. In Britain, for example, controversies in the late twentieth and early twenty-first centuries have revolved around four main issues:

- heterosexual coupledom as a requisite condition for claiming reproductive rights
- privatisation and discretion about the 'ownership' of children
- menopause as a natural marker of the cessation of women's reproductive capacities and rights
- maintenance of generational and kinship demarcations

Around these nubs of controversy, hegemonic norms around reproduction have been rendered explicit and contested. New identities and relationships have been generated in and through the negotiation over rights and resources around which these stories pivot. These include: 'out' lesbian mothers, coupled gay male parents, post-menopausal mothers, women who are simultaneously both surrogate mothers and generational grandmothers of the same child, etc.

Conclusion

This article has explored the evolution of a genre of popular technoscientific narratives, which I have labelled 'I can't have a baby' narratives. Linking these to new forms of intimate citizenship, which Ken Plummer and Lauren Berlant have identified, I have sketched the interplay between identity formation, communities, and media forms that have been associated with the evolution and circulation of these stories. The resilience and proliferation of this genre of narratives has helped to make reproductive science the rocket science of the early twenty-first century – the focus of the technoscientific imaginary. Meanwhile, a complex pattern of differentiation has spun out from these narratives unleashing challenging questions about rights and resources. From the outset, such narratives have constituted an embodied politics (a 'bio-politics'), and situating them in relation to Plummer's and Berlant's research makes this obvious. However, it was only when non-legitimated, 'marked' subjects (including most particularly, non-heterosexually identified women, gay men, post-menopausal women) began to tell these stories that their political nature gained widespread social acknowledgement.

The gender politics of these stories are complex indeed. The vision of technoscience meeting the needs of and responding to the desires predominantly of women would seem a progressive contrast with the sagas of the space race. Moreover, as Bryld (2001) indicates and I have echoed above, these narratives have opened new public space for lesbian women and gay men. Indeed, their claims for reproductive rights embedded in these narratives, in some ways, normalise and legitimate these identities. Moreover, these are predominantly feminised narratives of technoscientific salvation. Nevertheless, as Leah Wild's IVF diary illustrates, the use of the autobiographical voice is no guarantee that women remain at the centre of new reproduction practices and accounts of them. In fact, the heroes of these accounts are, for the most part, male scientists and doctors: in this particular branch of science, a few male 'pioneers' (such as Ian Craft, Robert Edwards, and Robert Winston in Britain) have become celebrated public heroes.

The productive and challenging consequences of these narratives make it difficult to tar them with the brush of Berlant's condemning analysis. There are, nonetheless, disturbing features of the form itself which Plummer's more equivocal assessment and sociological focus does not pick up. For this reason, I have tried to unpack the specific emotional mechanisms at play: the voice of 'everywoman', the fusion of the personal and universal, and to highlight aporia regarding class, ethnicity, etc, that characterised the genre. Countless other questions hover around the form: about the seemingly inherent right to one's 'own' child, about the preoccupation with reproduction, about the distribution of resources, etc.

The circulation of such stories has been a very significant factor in the normalisation of 'assisted reproduction': these stories help generate 'needs' for the new technology and proliferate more stories. Developments in this field of technoscience, in turn, beget more stories of assisted reproduction. High-level reproductive and communication technologies are the mediators of this productive interplay. Finally, it could be noted that, just as the stories and spectacles associated with the space race generated as well as allayed anxieties about global power in the West, reproductive narratives generate anxieties about reproduction, whilst containing them through promises of technoscientific salvation. Whatever Jeanette Winterson might think and due in no small measure to these popular narratives, in the early twenty-first century making babies has, in many ways, become socially and politically equivalent to rocket science.

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Designing the future
fables from the mobile telecoms industry

Laura Watts

The future: for a manufacturer of mobile devices (phones, camera phones and the rest) the future is a matter of design: what can be made, what will be made, what will sell? The future is condensed into a product, an artefact; it is designed into being, condensing the multitude of necessary marketing and engineering compromises, negotiated over maybe years of development. But what futures are being made by the industry, and what futures are unmade?

In this paper I will present two very different ethnographic stories, based upon my four month ethnography at the design studio of a major mobile telecoms handset manufacturer. Many quotations and artefacts will be taken directly from my ethnographic record. However, the events, locations, people and processes will be fictionalised, both to protect the anonymity of the company, but also to emphasise that the future is always fluid, transient; there are always other possibilities.

Laura Watts

Designing the future
fables from the mobile telecoms industry

Figures

Storytelling

Sharing

Re-experiencing

Figure 1. These words were copied from a presentation on long-term strategic direction, given at my ethnographic site.

Figure 2. This quartzite stone was collected from inside the glass bowl, sketched below, at my ethnographic site.

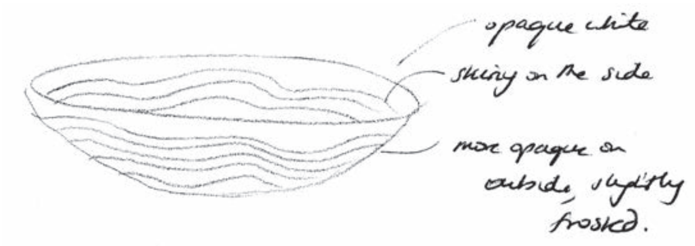

Figure 3. A field sketch of an opaque glass bowl, found on the desk of an industrial designer at my ethnographic site.

Prologue

The future: for a manufacturer of mobile devices (phones, camera phones and the rest) the future is a matter of design: What can be made? What will be made? What will sell? The future is made into a product, an artefact. It is designed into being, condensing the multitude of necessary marketing and engineering compromises, negotiated over maybe years of development. But what futures are being made by the industry?

Following are two pieces of writing based upon a four-month ethnography at the design studio of a major mobile telecoms handset manufacturer. They also draw on my experiences working as a designer inside the industry during the 1990s. This writing expresses my desire to interfere[1] with the futures of the mobile telecoms industry – to make differences, rather than to just analyse and critique its practices. Many quotations and artefacts are taken directly from my ethnographic record, however, the events, locations, people and processes have been partly fictionalised[2], both to protect the anonymity of the company, but also to emphasise that the future is always fluid, transient – there are always many different possibilities. Here, then, are two of them: two possible companies in two very different places, making two possible products and two possible futures.

Ethnography of 'M-Phone' near London

I sat, thin and exhausted, before a blank burgundy desk divider. The incessant roar of the air-conditioning, photocopiers and monitors was steadily draining me away. The line of distant windows, a turquoise sheen against the sky, produced a kind of lifeless illumination that even the overhead spots failed to stir. This was a design studio, and the ambient lighting was eminently well-designed for computer monitors, but I was not alone in longing for the white edge of a brilliant sun – one colour specialist had confided in me that she could only compare colour swatches (and do her job) by leaving the building.

A head appeared above the divider, smiling broadly (yet always with a slight sense of irony). It was Brian, the senior design manager; a man of geometric shirts, cheroots, and tireless enthusiasm; hard to pin down (often either in mid-air, or at least elsewhere in the world) but my indispensable company liaison.

"Ready..?" He asked.

"Absolutely."

Brian had agreed to take me through their future design strategy at eleven (it was now half-past one). With my ethnographic toolkit in hand, one pencil and a decomposing notebook, I headed with Brian for the meeting room on the far side of the studio.

It was a move from burgundy to magenta. A move from skeletal spines of black cable hanging from the ceiling, into a putrid mass of grey and yellow wires, seething over the table, over the floor, and down the walls. Those network and power cables seemed to fulfil a need to be always oozing into the creature at their centre: the company. A meeting did not mean a flow of shared thoughts or ideas between a group of people, but a queasy pulse of interruptions from other parts of the corporate body. Email set the background pulse rate, with a ceaseless rhythm of mobile phone calls and messages. Most managers emailed constantly, and handling several hundred emails a day was not uncommon (and much lamented).

But this was not a meeting, Brian wandered in without his laptop – he was generously offering his time to pass on what could be passed on of the senior management meetings, held behind closed doors. His mobile phone chirruped. He left. He re-appeared, smiling… His phone rang again… People constantly faded in and out of existence in the studio, as the pulse of the company made them flow around the world.

Finally, Brian put his phone down and stepped up to the projector screen. He began to pound through a hundred or so PowerPoint slides using a touch sensitive board (unfortunately misaligned so that, instead of touching the screen where the button was projected, you had to touch two inches below it).

"Okay, this one's from our consumer research group. Basically, the social trends for technology over the next five years or so are all about Storytelling, Sharing and Re-experiencing". The three words flashed up as a tag-line on a chart filled with a complex blur of graphics (see Figure 1). "That's what it's all about for us. How do we help people tell, share and re-experience their lives?"

He hit (two inches below) the button to go to the next slide. "Physical contexts will continue to blur for consumers" he read, and shrugged. "Pretty self-explanatory, that one."

Thump. Next slide. "New communities formed." Again, he had nothing to add. He began to pick up pace, blurring the next slides together, stopping periodically at a particular phrase or idea.

It was all fairly standard fare (and no doubt in the blur were more subtle nuances). But, from my own years in the industry, I recognised the moves: the mobile telecoms industry was (still) not in the business of Plain Old Telephony, but in the more refined and wholesome business of building relationships and communities. I sensed in this a technologically deterministic argument, as though the presence of a mobile telecoms network simply created new social relations, and thus more network traffic (more phone calls, more messages, and more business for the industry).

We cycled through several more slides, until Brian finally stopped in a flurry of graphics. We were done. My hand ached from writing what I would never be allowed to keep; those slides were too politically sensitive to be given to me. But I had recorded what was regarded as the strategic direction for the company, now the question was: how might that strategy become a device; how might the practice of strategic direction, the presentations and politics, become embedded in a product?

It was time to move on for, as I write this account, I am fusing fragments of my ethnography, the many times and many places, into a narrative; a fable that is accountable only to material and historical fragments, but accountable none the less. The meeting with a senior design manager, is one fragment, a chance conversation with an industrial designer will be another.

As Brian faded into another phone call, I hurried out into the main studio and around the corporate-issue desk pods until I entered the industrial designer's area. As I approached his desk, Andy, the owner, who had been loitering on a sofa in the library, suddenly leaped to my side, friendly (as always) yet faintly suspicious (as always).

We exchanged pleasantries as I scanned his inspirational flotsam: an embossed Japanese drinks can rested on the piles of papers by his monitor, and a small legion of Manga toy figures remained on permanent guard. However, I was particularly taken with a delicate white-frosted glass bowl and the polished quartzite pebbles that rested inside. I took one of the stones into my palm (see Figure 2), and quizzed Andy.

I discovered that he was interested in the texture of the bowl and stones as part of a recent camera phone project. I asked for more, and he wove me this little tale, stroking his black goatee beard as spoke:

"Senior management creates a set of priorities, the strategic requirements for the project: make it big and make it small. So it goes down to middle management, the heads of design and mechanical, who tell us to make it big and make it small. And we scratch our heads and try, and come back to middle management and say: well, we can make it big and make it big, or we can make it small and make it small. Middle management tells senior management, who go: no, we really need it big and small. So middle management say: okay, we'll tell them to try harder. So, we go off and the cycle repeats until senior management shout at us. And then they tell us: oh, but now we want it thin, that's the new priority."

It was a great tale, told with fervour, and I thanked him, although it did leave me with a sense of dislocation; there was no smooth translation between this tale of design practice, and Brian's tale of management strategy. Was there even a translation at all? As I pondered this, Andy asked me if I wanted to see the latest model of the camera phone, which had just arrived. And, of course, I did.

He pulled open a drawer and extracted a small hard, black case, placing it carefully on the desk top. As the lid was carefully pulled back, it revealed two glistening camera phone models, held tightly in grey foam.

"These were about five thousand each. I think they're almost the most expensive models we've ever had made."

He picked one up, brushed his fingers over the frosted white front. I knew it was made of wood, sprayed to look like metal and plastic, knew from my own design experiences how it would feel slightly warm. Yet it was seductive. I looked back at the white bowl and translucent stones, sensed something of their luminescence in the soft white form of the models. As the quartz pebble in my palm led my fingers to rub, almost absently, at a nagging imperfection, the bevelled edges of the models almost demanded to be touched. But I was cautioned not to handle, or even breath on, their surfaces. The question of touch, of handling, was a serious managerial decision. Focus group testing of new designs with consumers often only involved a plain block model and some illustrations (providing results that were both upheld and quietly derided, depending on the moment). These expensive, fully detailed models were reserved for impressing management and important customers who, I was constantly reminded, were the network operators, not the consumer.

Still fascinated by the models, I quickly sketched the white frosted bowl on Andy's desk (see Figure 3), thanked him again, and moved away; slunk back into my own temporary desk space.

Alone with my notes and sketches, the background noise re-asserted its baleful hum. From this story, from these fragments of practice at M-Phone, there seemed to be three pieces which together formed a collage: the three words from the corporate strategy 'Storytelling Sharing Re-experiencing' (Figure 1); the frosted white bowl (Figure 3); and the soft quartzite pebble (Figure 2), still held absently in my palm.

Ethnography of 'Sand14' on Isles of Orkney

"Oh, hullo there."

I looked up as Anne's bright self, in broad smile and red fleece, crept into the little room. Since arriving in a torrential downpour this morning (before seven – it must have been the long hours of sunlight or possibly the air that had me out of bed so early), I had taken to the odd central hearth to watch the black peat burn amber, and warm my feet over breakfast. I was in the Isles of Orkney, off the North East coast of Scotland, beyond John O'Groats. It was a wild place of broiling seas, wide low skies, and grit. Not a romantic place, treeless and windswept; a place of oil flares, hills and archaeology.

> "We'd thought you might have been speared this morning by the rain. Absolute stair rods!"

I grinned. It was impossible not to grin when Anne spoke, her effervescence was infectious.

Sheepishly, I tugged at the ends of my trousers, still slightly sodden. "I think I was only out in it for thirty seconds as I got out of the car, but it just blew under my umbrella."

> "Och, umbrellas!" Anne waved her hand at the preposterous notion. "This is Orkney. It rains sideways here, you know. You'll need a riot shield not an umbrella!"

We laughed, as rows of Orcadians armed with riot shields against the storm, marched through my imagination.

> "Richard's suggested we all head off to the mill for coffee, did you want join us?"

Great, a meeting, an opportunity to see how the company functioned in practice. "Yeah, definitely." I scrabbled beneath the wooden seat for my rucksack, its pockets laden with recording devices, ever ready for an ethnographic moment, and a little reluctantly rose from the fire-warmed chair. It was a tradition at Sand14 that the fire was always burning, so I threw another peat briquette on the hearth and left the strange little 'house' – holding the smell of peat in my lungs for as long as possible. This little stone building, one-up and one-down, formed the axis of a bright, ultra-modern domed interior – Sand14's premises[3]. Anne and I tracked South, past plants, lights, pin boards, and the other usual and less usual detritus of company life, leaving the dome and corridors of the main work area, to slip quietly into the foyer.

Of course, because this was Sand14, nothing was quite what I expected. For a design company generating extraordinary (and award-winning) future mobile devices, it was also extraordinarily hard to pin down any formal process, or any methodological approach at all. I was still struggling to see how the art and archaeology expounded by its founders translated, systematically or otherwise, into the concepts and models it produced.

A small group had already gathered in the foyer. Richard, hopping with nervous energy from one foot to the other, and gabbling at high speed to Simon, who was calmly making notes and sketches. George/ina was draped elegantly over the worn black sofa, ignoring all and staring out of the front doors, straight down the path to the towering monoliths in the field beyond. As Anne and I moved into view, however, she leaped to her feet, and with business-like efficiency had us all out of the door, down the path, and inside the company 'bus' (a battered long wheel-base Land Rover with spare parts rolling on the floor) in moments.

As we drove the wet mile down the road to the café we passed into another world. Sand14 was inside one of the greatest prehistoric monument complexes in the world; a part of a five thousand year-old architectural project. In the field opposite the grass and slate dome of the company building were three, seven-metre-high monoliths, once part of a stone circle. As we drove East, we passed the mound of a vast passage grave, a blur of a Neolithic village, a standing stone, and almost in a circle on the far hills all around us, beyond the rain soaked mist, were more standing stones, ever present on the edge of the horizon.

Once we had settled in the old mill café, Richard held court as usual, his strange and rather battered satchel overflowing onto the table. He leaned in, almost furtively, over his tea; black eyebrows bouncing up and down as he spoke.

"I have to say, I was a bit surprised at those models", he began, and I rapidly recollected that he had just been to visit a design consultancy in London. "Well, I'd heard about this touch-sensitive camera phone, but I rather thought the mock-up I saw looked like a prop from a 1950s B-movie.""It's the whole retro thing." Commented George, sounding slightly bored. "Silver and white, flashing lights, bulbous curve. It's just so totally uninspired. It has no freshness. It's like it doesn't really engage with the world, but is stuck fantasising about styles from the past. I just hate it."

Richard rolled on regardless, fingers weaving the air as though incanting spells. “Well, the day did rather improve, because I wandered into the British Library. I didn’t realise, but some of Ingold’s recent work on multi-sensory communication talks about the importance of the ‘lived experience’ as opposed to the reification of the senses[4]. I think this is crucial for us. What we are doing is transforming and translating[5] an experience of the world, not of the individual senses. It’s transformation, rather than transmission, which is central. So our work is really how to transform an experience, through silicon and radio, into something else.”

“And something no less magical…” murmured Anne.

“Absolutely. Beauty is the key.” Agreed Richard.

“But we have been really focused on haptics and force feedback, recently.” Simon, the interface designer, looked worried.

“Ah, well, don’t worry, this is not a redirection. I think we just need to keep it absolutely clear in our minds that we are not, we are not, designing a multi-sensory communications device, as a kind of evolution of voice and camera phones. That would be quite wrong. We are actually trying to make a rather coarse translation of a bit of the world.” He gave a sudden, quick, grin. “I guess it’s more like painting.”

“I don’t think it’s anything of the sort, Richard.” Said George, piqued.

“Ah, yes.” Richard paused for the briefest of moments. “But I do think that we need to be clear that we are not creating a communications device but a shared experience, and I think the two are quite different. I think what we are doing is generative, there’s no carrier wave. Nothing is transmitted only transformed.”

“Oh, sure.” Agreed George. “But it’s more like a photograph, which is a very particular, and I think quite bizarre, transformation of the world into a flat rectangle with a single point of perspective[6]. It is not art. Storytelling maybe, but it’s not painting.”

The conversation bounced back and forth between the three of them, with the two anthropologists, Anne and I, sharing the quiet space between it all.

Finally George, who seemed, as both artist and businesswoman, to always insist on the salient details, asked Richard how he might pitch this design concept to the mobile telecoms industry.

Richard winked to the rest of us around the table as he flipped over one of the pieces of paper scattered in front of him. On it, in thick pencil scrawl, were the words: Storytelling, Sharing, Re-experiencing” (see Figure 1).

George read the words, and then laughed. “Brilliant. Yes, they’ll love that.” She said.

When we returned to the ‘house’ (no one actually referred to the company premises as an office) I caught up with Simon, eager to understand how this latest move might impact his interface designs. We walked around the arc of flagstone corridor into the central domed atrium – always a blaze of sandstone, spotlights, and glass, with the mist and loch beyond. He had set up a couple of tables and a floor of paperwork in front of the glass wall; the billowing sky pressing down and around him. I scanned his desk: lots of paper, pens, an old CD player and chewed up headphones; there was one of the white-frosted glass bowls, still full of hot chocolate, the remnants of a French-style breakfast (see Figure 3) – they were always used for drinking chocolate, but I wasn’t sure of the significance. There was a laptop, closed and leaning against the window, with a polished quartzite pebble resting on its clasp. I picked it up (see Figure 2), and asked Simon if it was important.

“Feel it.” he replied.

I pressed the stone between my thumb and forefinger, rubbed its surface, trying to sense something unexpected. I felt the coldness, the smoothness, but also a slight crease in the surface, a fracture, which drew my thumb.

“You feel the crease?”

I nodded.

“Well that’s really what I’m interested in. The imperfection against the smoothness draws your fingers, doesn’t it? But it’s the colour, the translucency of the polished stone that draws your hand.”

“How does that lead to a mobile device?” I asked, alert.

He rummaged on his desk, pulled aside a few constellation maps, and revealed a strange, glistening black object, shaped like a rounded and elegantly sculpted letter ‘T’. It was not entirely black, in its depths were pale arteries of white. Nor was it completely smooth, it was etched with some grid pattern at the top. Simon held the maps back, and invited me to grasp the object. The shaft fitted easily down between my fingers and the handle snuggled comfortably into my palm. It was like holding some kind of designer bottle opener. The silken surface felt like sun-warmed marble, heavy, but gorgeous to touch. Instinctively I squeezed it, and felt the give of two pressure pads between my knuckles. A light appeared at one end, projecting down onto the floor. Then, extraordinary waves of what felt like cool water began to lap up and down my fingers. It was delicious. I realised there was a smudge of blue in the light on the carpet, put my other palm into the beam to bring it into focus.

PIt was a picture of someone's hand dangling in lapping water, and I heard a slightly distorted voice from the object whisper: "Can you feel that?"

I could.

I didn't know what to say, almost dropped the device, and gave it back to Simon. "That is …" I gave up.

Simon grinned. "Isn't it just!"

Epilogue

Those were two ethnographic accounts. Both accountable to a set of materials, artefacts and words I recorded during my four months of research. Both partly fictional. Neither 'true'. Nor could there ever be a 'true' account, there are only pieces of an archive: dislocated notes and decaying artefacts, all stitched together through a kind of 'poetic archaeology'[7]. In the words of Marilyn Strathern, there are only ever parts, which are not part of any whole[8]. All that there is of my four months are my memories (always partial) and my notes (always historical), and a collection of finds (always archaeological). In the space between my experiences of those moments, and the archaeology of my records, there is the possibility for multiple accounts, and multiple[9] stories, to be told. As I followed and recorded a mobile telecoms company, I also made the possibility for other companies. So, the future gets made as a matter of size at M-Phone, and as a matter of experience at Sand14. The future is made in the mists and monoliths on the Isles of Orkney at Sand14, and in the pulsing networks and roar of air-conditioning near London at M-Phone. Different places and different practices make different mobile telecoms products – and different mobile telecoms futures.

This article is about stories that are both fixed by the practices of the past, and made fluid by them. It is an excavation into those practices inside the mobile telecoms industry, which make the possibilities for the future, in politics, in design and in products, and in so doing also make other futures, other politics, other designs, and other products. This is, then, a Future Archaeology.

Acknowledgements

Thanks to the many colleagues who have read and commented on this draft, and in particular to Lucy Suchman and John Law. This research was made possible through the support of the Sir Richard Stapley Educational Trust, the Newby Trust and the Kathleen and Margery Elliott Scholarship Trust.

Notes

[1] As a project of ‘interference’ this writing draws upon the notion of ‘diffraction’, a generative approach to the mixing of texts and materials, proposed and discussed by Donna Haraway (1991). It is, perhaps, an answer to her question: "“What if the study and crafting of fiction and fact happened explicitly, instead of covertly, in the same room, and in all the rooms?” (Haraway 1997: 110).

[2] Bruno Latour suggests the genre of ‘scientifiction’ for such narratives that are partly fictional, partly ethnographic. See his story of the Aramis transport system (Latour 1996).

[3] For more information on the architectural principles involved in the construction of Sand14 see Richards 1996.

[4] See Ingold 2000.

[5] In a Sociology of Translation (also known as Actor-Network Theory) the notion of ‘translation’ includes the sense that things do not remain unaltered when they move; rather, the practice of changing the relations in which some ‘thing’ is embedded necessarily changes it. See Law and Hassard 1999.

[6] David Hockney (2002) explores this transformation by the photograph in his own artistic practice.

[7] See Michael Shanks (1992) for a discussion of ‘poetic archaeology’.

[8] See Strathern 1992: 90-115.

[9] In ‘multiple’ I am invoking Annemarie Mol’s work on ‘multiplicity’ in medical anthropology. In her example she suggests that, the multiple medical practices involved in arthrosclerosis, produce different versions of the disease; there are “more than one and less than many” arthroscleroses (see Mol 2002).

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Software and cosmopolitics: code as the language of the new Constitution

Denisa Kera

While Actor Network Theory in the late 90th moves from a purely descriptive methodology to a more normative search for an ideal society of humans and nonhumans, politics and science, the function of software rises from being a simple actor among other actors to becoming the most significant agency that builds hybrid collectives. The importance of software in the process of creating posthuman society is well reflected in the popular culture (movie trilogy Matrix, cyberpunk and SF literature in general) and it is gaining prominence up to a point where codes become almost a “language” of the nonhumans. Codes today are the language in which the new Constitution is continually re-written, to use the term introduced by Bruno Latour describing the more normative view of networks between humans and nonhumans. It is the language that not only fosters communication between humans and nonhumans, especially men and machines, but more importantly, creates symbiotic relations between them and builds large symbiotic units like groups of players sharing online worlds, complex cities and the whole globalized world.

Software and cosmopolitics: code as the language of the new Constitution

To understand the unique property of computer code as the language of the new Constitution, we have to examine it in the context of different attempts to assert active nonhuman agency and to give activity and even voice to things we prefer to see as passive. Active nonhuman entities are becoming an important topic in popular culture, especially in SF literature, and increasingly in different posthumanist philosophies. The well-explored aspect of an ‘active’ and even aggressive nonhumanity in SF literature has many parallels in posthumanist philosophies, where material agency is not simply a resistance to our will and knowledge but an evolving alterity that is in a ‘state’ of becoming and reconfiguration. Material exteriority is not a firm and stable ground outside of ourselves that we have to mirror, but a dynamic place for inter (intra) activity (Haraway 1991, Barad 2003) and performativity (Pickering 1995) that merges nature and culture, science and politics, technology and society etc. A similar posthumanist agenda is clearly stated in the Actor Network Theory (ANT) and its concepts concerning the translation and creation of new collectives linking humans with nonhumans (Latour 1993), creating various so-called “quasi objects”.

From this perspective, the discovery of objects and processes that exist independently, outside of our minds and culture (as scientific realism understands nonhuman entities), also involves negotiation and forming new alliances and configurations with such objects and processes. The dynamic reality beyond human language, cognition and agency becomes the base for processes such as the associations of humans and things in the heterogeneous networks of the Actor Network Theory (Latour 1993), for machinic assemblages and transgressing new complexities (rhizomes) (Deleuze and Guattari 1987), and even for technological and material alterity and the idea of autonomous technological evolution (Kittler 1997). Popular culture, especially the Matrix films and cyberpunk literature, further develops this idea and concentrates on a special class of nonhumans that are also prominent in our world today: programs and software. What is it about software that it dominates our imagination today, and how does it relate to issues of nonhumanity? Are programmes different from other nonhuman agents? Should we consider code to be the language of the nonhumans, which they speak and perform their agency with? Is it the language in which we constantly re-write our new Constitution?

Even if we do not want to go that far, software remains a special medium enabling faster translation between different agents, usually hardware and humans. It facilitates new networks and collectives and blurs the difference between technology and politics and technology and culture. In a similar fashion, the software theory connects all dominant paradigms and issues related to questions of sign, power, identity, subject and the status of objective reality and knowledge. The free software and Open Source movement as well as the group of researchers around so-called social software (Marc Canter, Joi Ito, Clay Shirky, Danah Boyd, Ross Mayfield) insist on the social and political aspects. Various groups of activists, hackers and cyberpunk fans further develop these aspects into the idea of software as a means for revolution, anarchy or utopia (William Gibson, Bruce Sterling, Geert Lovink, Cornelia Sollfrank, Nathan Martin). A very large and important group of artists and theoreticians propagates the idea of software as the new artistic medium (Runme.org, Rhizome.org etc). The broad, cultural meaning of software is emphasised by authors commonly listed under the study of cyberculture (Howard Rheingold, Sherry Turkle, Charles Ess, William Mitchell). For more than a decade, the semiotic and language aspects of software have been highlighted by a group of hypertext researchers and scholars (George Landow, Jay Bolter, Michal Joyce, Mark Bernstein, Michal Heim, Stuart Moulthrop). The aesthetic properties of computer code and its poetics are explored by representatives of "code" poetry (Sharon Hopkins, Mez, Alan Sondheim, Ted Warnell, Alex McLean) and computer virus admirers, like Alessandro Ludovico, Jaromil, and a group of Italian hackers and artists from the epidemiC collective. The cognitive aspects of software were well explored by the early visionaries of hypertext and HCI (Ted Nelson, Vannevar Bush, Doug Engelbart) and artificial intelligence scholars (Alan Turing, J.C.R. Licklider, John McCarthy, Daniel Dennett, Wolfgang Wahlster, Terry Winograd). The inclination of cognitive science toward an autopoietic and physiological understanding of cognitive processes as connecting organisms with their environment is applied to the field of software research by the philosopher Mark Hansen (2004) and the literary scholar Joseph Tabbi (2002). They formulate a view of software as a process of cognitive self-organisation of humans and autopoiesis of living systems.

As we can see from this quick overview of software research in the last 50 years, on one side software remains a simple collection of computer codes – signs; on the other, it is envisioned as the most powerful instrument transforming our economy, politics, culture etc, repeatedly posing questions about control and anarchy. Software supports science on its mission to conquer objective reality and at the same time offers creative instruments for new artistic works. It is an extension of the cognitive, physiological and other processes in the subject, but is also an 'extension' of objective reality in the form of simulations and models of complex natural processes. How do all these functions hold together? How to explain the ability of software to create these unique connections among paradigms but also between humans, nature and machines? Software is engaged in a balancing act between art and science, political utopia and the possibility of absolute terror, between the logical perfection of artificial languages and cabalistic dreams about the magical power of letters.

The base for all these phenomena remains the 'material' form of the programming languages. Their logical structure seems to implement the scientific and positivist vision of words as an exact representation of things, but these signs are not a simple representation of a pre-given reality. They are able to simulate (rather than represent) even the most complex processes and effects (weather, economical systems, the function of genes in the organisms etc.). The connection between sign and what is outside the sign, between the signifier and the signified in the case of the code, is never a simple semantic fact. It has the more pragmatic form of an event or an instruction for the processor, which is executed and makes changes in the registers (memory). Code, or sign in the form of these binary inscriptions, is always an event, a change in the 'material' world of the machines and in the form of complex programs it changes and affects our whole world. The performative properties of the code and software transgress the machine, and they are the most important transformative force in the world today, organising people, machines and things in new equilibriums. For this reason, software becomes paradoxically the most successful critique and challenge to the representational and correspondence model of language and defeats other similar efforts to step outside representation in philosophy, the sciences, as well as in art.

Because software changes and creates new networks and connections between people, their artefacts and nature, the result is always a more complex and emergent environment. In order to describe this environment of hybrid connections, emergent phenomena and accelerating technologies, it is crucial to articulate the paradigm of the code and the view of language and signs as having a direct connection to reality not because of their transparency but because of their performativity. The code offers an alternative to the representational model of the world-language relation and opens a new view of what ontology is and how to reflect upon it. Codes create not only new applications and programmes but also more complex forms of coexistence in the form of posthuman organisms and cyborgs. The differences between individual human beings and machines gradually disappear, as well as the differences between whole cities and groups of people that are united in these new posthuman and collective organisms. For this reason, software embodies the philosophical concepts of ontology as becoming, concepts such as singularity (Deleuze 1987), emergence or autopoiesis (Maturana, Varela 1991) and the posthumanist idea of an active and dynamic reality.

The performative properties of the codes in applications and software affect not only our given ways of work and communication but even generate entirely new social structures, economic relations and change the life of the planet. When we look at biotechnology and nanotechnology, we see they even change our basic divisions between natural and artificial, between animate and inanimate, as these concepts are transgressed by the idea of self-replicating machines in the form of molecules, chips in the form of cells and other bio-information experiments. Software ceases to be a simple instrument and becomes more like a new stage of evolution, the possibility of a more complex organism. These 'ontological' and 'evolutionary' properties of code are very close to the ANT concepts, especially to its later development in the work of Bruno Latour.

In his work Politics of Nature (2004), Bruno Latour articulates most clearly the normative ideal of a society that connects science and politics, humans and nonhumans.

An important condition of such a society is the possibility of communication with nonhumans (described in detail in Chapter 2 of his book). Interaction and communication are the simple conditions required for any collective to work, and in order to describe the functioning of a hybrid collective of humans and nonhumans that is in constant flux, we have to address a number of questions: What is the condition of citizenship in the cosmopolitical state? How do humans and nonhumans interchange their properties in the networks and collectives? How do they communicate between themselves? How can they form a common identity or state their common interest? In Latour's opinion, things are never mute and passive but perform their presence in numerous ways, either as science laws or by increasing their importance in our everyday life and in our history. In his opinion, the scientific methods and tools are "speech prostheses" for the nonhumans. These prostheses serve also a function similar to spokespersons, who are able to correctly interpret, or misinterpret, the opinions and interests of another. To research then means to give voice to things (2004, 66), and the problems in communication between humans and nonhumans are seen as "speech impedimenta" (2004, 82 – 87). Nonhumans simply speak languages that are different from ours, and whenever we manage to 'understand' each other we believe that 'facts' speak for themselves instead of seeing this as a successful case of translation, exchange and the creation of a new network or collective.

The new Constitution created out of these exchanges displays, above all, the heterogeneous character of a world in which different actors, agents or actants (programmes, humans, machines etc.) are all part of the same network of co-dependence. This, together with other similar concepts in Latour (1999, 2004) concerning political ecology, experimental anthropology and even cosmopolitics, expands the initial descriptive character of ANT and forms a more normative understanding, almost a manifesto. While ANT only follows the actors and their interactions that are forming the new networks and hybrids, the Latour's later concepts establish a political programme of how to live together and form new collectives with nonhumans.

The "Parliament of Things" (Latour 1993) and its new Constitution rely on the communication between emergent technological and posthuman agents that involve the whole cosmos in the ever-changing collectives. The crucial role in this is played by what Michell Serres and Bruno Latour call "quasi-objects". These are the heterogeneous agents that belong to the different and often incompatible worlds and spheres of influence. They are often simultaneously social, natural and discursive phenomena. Computer code is today becoming the ultimate quasi-object in that it increases the possibility of translation and interaction between different agents. For this reason it has a crucial role in the pursuit of a new Constitution that will settle disputes between humans, machines and programmes, as seen in the Matrix film trilogy. Furthermore, code, as a quasi-object, bridges the divide not only between humans and machines but even between structure and genesis (event), theory and practice, language (interpretation) and performance and between politics (philosophy) and technology. Computer code is simply a sign that can be executed, it is a sign and an event, and has the capacity to breach all discussions between language and being, mind and body, spirit and matter etc. Software always creates new collectives of heterogeneous agents and its function is similar to that in the film Matrix: to introduce new agents, connect them with the established order and then transgress it.

The importance of programmes today is comparable to the situation in the film Matrix. Programmes become able to 're-write' and evolve the existing order and the "version of the collective" and to create complex human-machine interactions. New hybrids and collectives emerge with every new software and system, as in the case of P2P, or so called social software applications that bring new possibilities of group interaction but also human-machine interaction. They have become the leading forces behind all the transformations in our world, not only the running of our economies and cities but changing our laws and notions of property or other values and beliefs. The "Parliament of Things" that Latour envisions to express his idea of the political involvement of the nonhumans is actually a "Parliament of codes" that brings the new 'aliens' into our world and shapes the new collectives. What makes all of this possible is the hybrid nature of the code that is apparent even on the level of programming languages. Programming languages resemble natural languages used by humans, but they do not serve as communication among people. They do not serve to communicate or represent. Their signs produce events and generative processes, and this performativity connects our language and thinking with the machine processes and creates complex interactions, and even systems of interdependence and symbiosis.

In contemporary philosophy, linguistics and social sciences, performativity has become an influential concept that is used to articulate the different roles of extralingusitic elements. It points to social institutions, conventions and rituals (in linguistic pragmatics and sociolinguistics), but also to iterability allowing for differentiation. This latter notion of performativity as the iterability of signs explains how meaning and identity are always generated rather than represented or constructed (Derrida 1982, Butler 1997). ANT uses this latter concept of performativity to explain not only meaning and identity but to build a whole new ontology. Performativity in ANT makes us realise that matter and the exterior world are not given or passive but are active agents with which we interact to re-create new worlds and collectives (Barad 2003). Pickering (1995) describes this situation as "the mangle" of human and material agency, each switching between playing active and passive roles. In a similar fashion, all actors (actants) in Latour (1993, 1999) are defined by their performance and constant transformations.

The ultimate example of performativity as an interaction with new actors is programming languages: their codes use signs to produce effects but also to translate and connect machines with humans as well as machines with other machines. Because of these properties of the code, the new cosmopolitics should not be outlined or reduced to sociological and ethical terms and questions. The “new information order” brought by the matrix, whether in the films or in the real world, is simply the order of the code that is always generative and emergent, with no values ascribed to it in advance. Even in cryptography and logic, as the predecessors to software, the efficient code was envisioned as a language abstracted from social practice, tradition and representation. Artificial languages were not meant to represent the existing knowledge and the world but to create a better one. They were often seen as a solution to the problems of social fragmentation in the aftermath of the Thirty Years’ War (Batchelor 1999). The idea of the code is always about enabling communication and translation between various systems of knowledge, languages, cultures and even domains of being such as machines and humans. It creates new hybrids and new collectives that will change all our notions of ethics, politics and philosophy.

The matrix (the place of programmes portrayed in the film), and currently the infrastructure of software, are simply means to accelerate the creation of hybrids involving nature, machines, people and other actants. Is this new Babel built on the universal language of code destined for the same disaster as the old one? Are the disasters of the globalised and hybrid world only symptoms of a growing and open system, as Serres states in his account of universal parasitism as a model of evolution (Serres 1982)? Code as the universal language of nonhumanity and the new Constitution is, like all programming languages, in a state of “permanent incompletion”. It is universal but not perfect, it is simply open source, trying to involve more and more agents.

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Global, Local

Disaster in agriculture: or foot and mouth mobilities[1] [*]

John Law

This paper explores the dynamics of the outbreak of foot and mouth disease in the UK in 2001. Following Charles Perrow’s analysis of the catastrophic breakdown of technological systems, the UK agricultural system is treated as a set of flows that are both tightly coupled and complex. This suggests that the stability of the agricultural system is precarious, and that when it is disrupted (as it was with the arrival of the foot and mouth virus) the consequences may be large scale and catastrophic. The foot and mouth outbreak, and more generally, aspects of global agriculture, are thus understood as ‚normal accidents‘.

[*] Law, J /Disaster in agriculture: Or foot and mouth mobilities/to be published in Environment and Planning A, 2006, 38 (2), Pion Limited, London

Disaster in agriculture: or foot and mouth mobilities

Introduction

The US Army Corps of Engineers has been re-engineering the Mississippi and its tributaries for nearly a century, cutting off meanders, building dikes, creating revetments, dredging it, and building dams on its tributaries[2]. This is engineering on a heroic scale. Only the Amazon and the Congo have larger drainage basins. The Mississippi's drainage area covers 1,245,000 square miles, 41% of the continental US. But if the scope of the engineering has been heroic, then so to have the reasons for attempting it in the first place.

The first and original object was to try to prevent large scale flooding. There were six major floods between 1849 and 1927. It was the last of these that led to the Mississippi flood control project in its contemporary form. A second major aim was to render the channel navigable. For this is one of the US's vital economic arteries. 30 million tons of freight were carried in 1940, and over 400 million in 1984. Barges move through 29 locks between Minneapolis and St. Louis and carry a fifth of the US's coal, a third of its petroleum, and countless other commodities. And third, the intention was to release the floodplain for agriculture and settlement. Since 1940 about four fifths of the original floodplain has been drained and is economically productive. Many tens or hundreds of thousands of people live in areas that were previously subject to flooding.

In 1993 it all went wrong. A combination of factors including high rainfall and already waterlogged ground led to a major flood. The Mississippi rose (at St Louis it was at flood level for 144 days), three billion cubic metres of water broke through the levées and seventeen thousand square miles of the previous floodplain were submerged. 26,000 people were evacuated, fifty died, and 53,000 homes were damaged. The direct economic cost of the disaster was in the region $10-$12bn. Indirect costs were much higher. Ironically but not co-incidentally, a larger disaster was averted by the failure of the dikes since this released pressure and flow downstream.

Why the disaster? I've mentioned the unusual weather: high rainfall, waterlogged ground, and an unusual rainfall pattern, all of these played a role. But so too did the flood control works, the heroic efforts of the Corps of Engineers to avoid disaster in the first place. Question, then: did *they* fail? Any response to this question is controversial.

The Corps and its supporters deny any failure. They had been asked to design and build a system that would control a flood 11% larger than the one of 1927 and this is what they had done. That the 1993 flood *was* larger than the design allowed. It was a flood in a 100 years. Engineering, they argue, is a matter of cost and specification. If you were to spend enough money you could build a flood control system that would only be overwhelmed, say, every 1000 years. But this they had not been asked to do.

Critics, however, say yes they did, they did fail. Or rather they didn't fail as an organisation as such, but that the whole *idea* of trying to control the flows of nature on such a gargantuan scale is flawed. They make this argument for two reasons. First, because in due course there *will* be the one-in-a-thousand-year flood. And second, because river engineering doesn't just *control* floods but it also *contributes* to them in the first place. And it does this in at least two ways.

First, if you shorten channels by taking away the meanders, then you increase the river's gradient and it flows more fiercely. But the river engineers add that it, the river, doesn't like this. It tends to want to return to its original state. So it is constantly trying to re-create meanders and slow itself up. It *tries* to wander about more. Hence the need for revetments and the constant need to maintain these. Engineering is, so to speak, constantly struggling against (a particular version of) nature.[3]

And second, wetlands act like blotting paper. They absorb water fast and release it slowly. If you take them away then rainfall is delivered much more quickly into the river system. Flooding is more likely. You can, yes, engineer possible solutions to this problem. For instance you can, as the Corps of Engineers have done, create dams on tributaries. Indeed you can allow controlled flooding, as is done on the Colorado, and on the lower reaches of the Rhine in the Netherlands.[4] But the critics argue that the system is not self-correcting. In due course something *will* go wrong.

My topic is not river engineering as such, but I start with this story because it very directly and materially illustrates several crucial issues that arise in the social and technical engineering of the *materialities of flows and mobilities*.

First, it straightforwardly exemplifies a widely appreciated modernist paradox. On the one hand there is the technical and social capacity to intervene and remake the environment on a large scale. Indeed, there are good reasons for doing so. The economic success of the US, not to mention the lives and livelihoods of many of its citizens, are in part a consequence of the work of the Corps of Engineers. But on the other hand, it illustrates the way in which the capacity to intervene also has its downside. Attempts to avoid disadvantage and disaster also help to generate the very conditions for disaster in the first place. The cliché is that we live in a 'risk society' (Beck 1992, Beck *et al.* 2003).

Second, I like it precisely because it is very literally about flows and mobilities. Though it has its limits as a metaphor, it also helps me to think about flows that are, so to speak, less literal, or at any rate less easily seen. My contention is that we're not terribly good at doing this. In particular, I suggest that we're not terribly good at understanding the materialities and the paradoxes of those flows, the dikes and the revetments of globalisation, the precarious barriers and immobilities that are also entailed in the social engineering of flow. Some of the paradoxes here are obvious. Notoriously, capital flows whereas, perhaps because, people are stopped. But the barrier conditions for, shall we say, world trade, are complex, subtle, and fraught with more or less invisible risks. And this, for a particular case, that of the flow of animals and animal products, is my topic.

This, then, is my bottom line, and I borrow it from Marxist-inspired geographers such as Doreen Massey.[5] Flows require barriers. The barriers help to increase differences in level, high and low, the differences in level provide the energy that, for instance, drives world trade. Barriers keep out people, but they also distinguish between different kinds of non-humans. And they are risky and ambivalent not only for those who are excluded, but also for those privileged enough to live on the now-drained flood plains.

My argument is that the 2001 foot and mouth epidemic in the UK illustrates the ambivalent dangers of large-scale fluid engineering. Foot and mouth, then, is my topic.

Global flows and barriers

The particular strain of foot and mouth that came to the UK in 2001 (there are lots of others) was first identified in Central India in 1990. How did it arise? No one knows. But viruses mutate. And those that mutate successfully parasite their way along other displacements and flows. For foot and mouth the following are important: wind (though usually fairly locally); the movement of infected animals (any distance); direct contacts between animals (close proximity); shared pasturage; the distribution of meat or meat products that circulate through the networks of trade (again any distance); and human contact when people have been previously in close contact with infected animals (variable, but usually fairly local).[6]

Really effective micro-organisms don't kill their hosts, at least not very quickly.[7] They need to infect more than one other host before they do so. And foot and mouth, though considerably nastier than the common cold, especially for pigs and cows which often suffer very severely, mostly doesn't kill its hosts.[8] It is very successful, and it is also very, very, infectious. So if the carriers and the flows that it needs for its movement are available, it spreads. As I have noted, the specific strain that came to Britain in 2001 appeared in central India, in 1990.[9] By 1995 it had spread across much of India, and by 1998 it had inserted itself into the international trade in animals and meat products and was moving much more quickly. It had turned up in Malaysia, in a number of the impoverished countries of East Africa, and in Iran, Iraq and Turkey. By 2001, instead of co-existing with other versions of foot and mouth in areas where the condition was endemic it had appeared in a number of countries that had been free of foot and mouth for a number of years, including South Korea, Japan, and the UK.

Global material flows imply the (attempted) creation of global and equally material barriers. Some of those barriers have to do with micro-organisms. The foot and mouth virus is unwelcome anywhere, but it is most particularly unwelcome in countries that have been certified ‘disease free’. But such classifications do not exist without an elaborate apparatus for their production. So what is that apparatus?

The answer takes us into a series of international organizations including especially the EU, the WTO, and a body called the OIE, the Organization International des Épizooties.[10] In their different ways the EU and the WTO try to regulate trade. Both are committed to the absence of specific trade barriers (though, as we know, this implies fierce barriers in other places). To the extent that trade involves animals and micro-organisms the two organisations follow the advice of the OIE. The OIE lists notifiable animal diseases both in order to limit their spread and to help in their eradication. It isn’t too much of an apparatus or an organisation in its own right. *Though it was* set up in the nineteen-twenties it is pretty much dependent on the advice and the expertise of selected national veterinary laboratories. One of these, a world reference laboratory for foot and mouth is the Institute for Animal Health at Pirbright, near Woking, in the UK.

With the help of its reference laboratories, the OIE looks at each country (or sometimes each region within a country) and each disease to determine if it is present. For foot and mouth countries are classified in one of three ways. In descending order of merit these are: (a) disease free *without* (routine) vaccination; (b) disease free *with* vaccination; and (c) disease endemic.[11] This classification is hugely consequential because it regulates trade, the flows of animals and meat products. Countries (or areas) that are disease free without routine vaccination may export their animals anywhere. Those that not are much more restricted.

They may send meat to disease-free and non-vaccinated countries, but only if that meat is taken off the bone under specified conditions. But to play this game in the first place, to aspire to disease free status, the OIE also needs to be persuaded that a country has reliable systems for disease surveillance, reporting, control and eradication – together with an independent state veterinary service.[12] Some states, it is clear, don’t even qualify to play.

Which are the countries that are disease free without vaccination? The answer is unsurprising. In recent years these have been the member states of the EU, the USA and Canada, a number of Pacific rim countries including Australia and New Zealand, and, though more precariously, Argentina. Where there is wealth, and the agricultural practices and state apparatuses to match, then there is no foot and mouth. And neither is there (need for) vaccination under normal circumstances.

The OIE/WTO rules of trade act like a dike around these privileged areas. Animals may flow out but not in. This division between the inside and the outside brings several kinds of economic advantage for those within. First, as we have seen, trade is relatively unregulated, much freer. One consequence is that markets are larger and animals and animal products are worth more. A series of consequential investments follow on from this. In particular, animals are bred – and fed – for productivity. Second, the costs of the disease itself are avoided and, in particular, the loss in weight and in milk production that follow infection. Third, the cost of vaccination is avoided. Indeed, it was on this basis that a disease-free non-vaccination policy was adopted in 1991 by the whole of the EU. Before this date this was the policy of only the UK, Ireland and Denmark. In preparing for the Single European Market the EC commissioned a cost-benefit analysis of this strategy. This came down in favour of stamping the disease out, and working up contingency plans for the expected occasional outbreaks. And, indeed, at least until 2001 this policy turned out to be economically justified. Between 1991 and 2001 there were four small epidemics, one in Italy and three in Greece. These cost about €30 million to eradicate, whilst routine vaccination would have cost €1 billion.[13] After 2001 the calculations look rather different. The 2001 epidemic in the UK cost around €4 billion, and if indirect costs are included, perhaps up to about €11 billion.

The inference is obvious: this is the risk society at work. To move to a vaccination-free policy was like draining wetlands and building on them. It brought benefits but it increased the likelihood that the dikes would be breached, that the virus would pour into the European space and that, once it had done so, it would spread more easily. Hydraulic engineers and sociologists of disaster sometimes talk of the 'levée effect'. This is the false sense of security that grows among those who live behind the dikes, the loss of memory of the downside implied in the ambivalent contract with control. The foot and mouth free zone of the EU generated its own levée effect.[14]

Manning the dikes

My overall suggestion is that there has been too much building on the viral floodplain. But to think this through we need to understand why the viruses are so keen to flood in. The answer is that the animals that are carrying them are also keen to get in – or the people are keen to move those animals. And arguably it is getting easier for them to do so. Here is the Royal Society ruminating on the problem:

> 'The price of a kilogram of meat in the markets of Istanbul was five times that on the Eastern border areas of Iran during that [1998-2000] period; this demand gradient, coupled with improving political relations between Turkey and Iran as well as improved road infrastructure, led to an increase in trade, often illegal.' The Royal Society (2002, p 44)

So the largest part of the answer is: economics, including illegal economics, linked up with the circulations of transport. Other sources of leakage include personal imports, waste food products that end up perfectly legitimately within the virus-free zone, and the effects of meteorology. (There is strong evidence that an outbreak on a single farm in the Isle of Wight in 1981 was caused by viruses blown 250 kilometres across the Channel from Brittany).[15]

So the rules say otherwise, but the flow of unlicensed animal products is real. And here the job of the US Army Corps of Engineers is child's play compared with that of the Customs and Excise and the State Veterinary Service. At least with dikes and flows of water there is likely to be a line that can be traced on a map between the water and the land. The places where leaks might spring are geographically obvious. Not so for viruses and contaminated meat products. These may pop up almost anywhere. The potential size of the problem is stunning: around 2.5 million containers arrive in the UK each year.[16] I don't have a figure for the number of containers inspected but it is probably no more than 100,000,[17] and in any case most of the time public discourse is much more pre-occupied with other illegalities – classified drugs or economic migrants – than it is with illegal economic foodstuffs. Then again there were more than 42 million air passenger movements between the UK and non-European destinations in 2001[18] – many, therefore, from countries with endemic foot and mouth. A disease-free vaccination-free policy is indeed fraught with risk.

Leaking: Cheale's abattoir

Foot and mouth was discovered in the UK on Monday 19th February, 2001 in Cheale's abattoir in Brentwood, Essex. Built on the flood plain, we may also imagine this as a set of flows and mobilities in its own right. Animals were trucked in, held in small fields, lairage, for a few hours or days, and driven into the sheds for slaughter.[19] The men who move the animals from the lairage to the sheds are drovers. In the middle of the morning of 19th February Thomas Vidgeon, a drover, noticed that some sows were squealing in pain and finding it difficult to walk. He called the abattoir's Official Veterinary Surgeon, Craig Kirby. Kirby had walked round the lairage on Friday and noticed that some of the sows seemed lethargic. Now he found that many had blisters, some burst and infected, on their snouts and their feet.[20] He straightaway knew that this was either swine vesicular disease or foot and mouth: in pigs the two are clinically indistinguishable. Either way this was very bad news. Both conditions are highly infectious, notifiable to the State Veterinary Service (SVS), and on the OIE's 'List A'. If either were confirmed, the UK would immediately lose its precious 'disease free, vaccination free status'.

Kirby declared the premises infected, stopped the slaughter and the movement of animals, carcasses and people, and called the SVS. Two vets came from Chelmsford, and the three of them started to inspect the animals and supervise the process of disinfecting people and premises. They also took samples for laboratory testing. At five pm the samples were ready. A Ministry of Agriculture, Fisheries and Food (MAFF)[21] employee got in his car, and drove them round the M25 to the Institute for Animal Health (IAH) in Pirbright. An email got lost and no one knew the samples were on their way, so laboratory testing only started with start of business on 20th February. By midday foot and mouth was confirmed. All animal movements in the vicinity of Brentwood were stopped.

Tracing the leak: detective work

But where had the infection come from? An answer to this question took very complicated and very large scale detective work. Thousands upon thousands animals had come into the abattoir, and meat products, possibly infected, had been sent to many destinations. Hundreds of vehicles and people had moved through the premises. And many, many, more animals had been in contact with those people and their vehicles. How to trace all this?

Abattoirs keep records. The records at Cheale's were in good order but they were hand-written[0]. It took forty-eight hours to plough through them. And when this was done it became clear, though this was no surprise, that animals had come from all over the country, from 600 locations in all: a set of mobilities and flows on the flood plain.

They attended first to pigs. The paperwork showed that the pigs with the infection had originated on one of four farms on the Isle of Wight, or in Buckinghamshire, Suffolk or Yorkshire. These were quickly visited, but revealed no sign of infection. Obviously the animals had caught the disease at the slaughterhouse. The net widened as the vets started the laborious process of inspecting animals on all the farms that had sent pigs to Cheale's over the previous two weeks. These farms were spread all round the country.

The SVS prioritised those farms licensed to feed their animals pig swill. And what they found is common knowledge. When they arrived at Burnside Farm in Tyne and Wear near Newcastle upon Tyne on Thursday 22nd February they discovered active infection on a large scale. A few pigs showed no symptoms, but many more were suffering from the disease, and yet others showed signs that they had recovered from it. The SVS was to conclude that 90% of the pigs had, or had suffered from, the disease. Clearly the outbreak had been going on for weeks. But how had it started?

Painstakingly, the vets worked through a whole series of possibilities: animals, people, air, vehicles, discharges, materials, waste disposal, illegal rubbish dumping, and

Newcastle Airport, among them. An obvious source was the piglets bought in to be fattened. The Waugh brothers had bought piglets from 85 farms, and the SVS checked them all. There was no sign of infection. They looked at the pattern of movement on and off the farm. The Waugh brothers weren't very sociable and the farm was well-fenced and inhospitable: there were few visitors. Had the infection been blown from a nearby farm? The answer was no. When the vets looked they found infection on a number of other farms, but it was clear this had come on the wind *from* Burnside and not the other way round.

Then they looked at the feeding arrangements, the source of the swill fed to the pigs. The Waugh brothers collected waste from bakeries, hotels, restaurants, schools and a military facility in the area. (Their paperwork, and so the list of establishments, was not complete). The law said they couldn't feed this directly to their pigs. This was because it might be infected with a range of viruses including foot and mouth. First it had to be heat-treated. So what they did, or were supposed to do, was to leave it in containers on the edge of their property to be taken for treatment to a nearby farm. Then it was returned in different containers to go to the pigs. That was the theory. The practice was clearly somewhat different. The SVS found *untreated* food in the containers for the *treated* food. They also found:

> '… evidence of cutlery in the pig troughs and pens at Burnside Farm. Catering waste normally contains some cutlery but it would be unusual for this cutlery to survive the processing operation and end up in the processed waste fed to livestock.' Department for Environment (2002, p. 19).

The evidence was circumstantial. The Waugh brothers acknowledged no wrong-doing. But given the physical distribution of the infection among the animals and their feeding arrangements the evidence was overwhelming: the pigs had been infected by unsterilised waste that had, somehow or other, included illegally imported meat products.[23] And this was where the trail ended: in a set of unsubstantiated and often racist rumours about illegal imports.

The flood

The State Veterinary Service is not very large and it was struggling. Briefly the vets breathed a provisional sigh of relief. There was some chance that the outbreak could be contained. As we know, this hope was short-lived. A quick version of the story runs so.

The infection had jumped, as an aerosol of virus, to a few farms near Brentwood, and a larger number close to Heddon-on-the-Wall. But when the vets looked at the paperwork of one of the Northumberland farms at Ponteland they discovered that nineteen sheep had been sold from the Ponteland farm at Hexham market on Tuesday

13th February (note the date: nearly a week before the infection was discovered in Essex). Three had gone to a butcher and six to a Lancashire farm, but the other ten had been bought by a dealer.[24] He had taken these and 174 others to Longtown Market near Carlisle, in Cumbria, on the Scottish border on 15th February. And here, at the market, their paths had crossed with those of at least other 24,500 other sheep. This was the number of animals that had passed through the market between February 14th and 23rd. And those 24,500 sheep had in turn been sold to 181 buyers from all over England and southern Scotland. This, it was clear, was a disaster in the making. A national ban on movement was imposed on the 23rd February, but the vets knew it was too late. And so it proved. On the 24th the disease was discovered on a farm of a dealer at Highampton in Devon who had bought sheep at Longtown. And then the epidemic really started. Five cases were reported on Monday 26th, six on Tuesday 27th, nine on Wednesday 28th, five on Thursday March 1st, nine on Friday 2nd, fourteen on Saturday 3rd, and thirteen on Sunday 4th, sixty-seven since the initial discovery of the disease. These were spread across eighteen counties, with large concentrations in Devon, Cumbria and Dumfries and Galloway as well as Tyneside and Essex. Suddenly there were twelve separate and epidemiologically distinct outbreaks around the country. No longer a trickle but a flood, and a flood that had started many days before the national ban on animal movements. Many days before anyone knew that the dyke had been breached.

Why had a leak turned into a flood?

There are some instructive contingencies. The first is the inactivity of the Waughs. Had they called in the vets two weeks earlier the leak might have been stopped then and there. But they didn't. This leads to second contingency. Foot and mouth infection is particularly virulent in pigs. It is clear that they are ill, and once they catch it they emit the virus in huge quantities. So Burnside farm was emitting a plume of virus capable of infecting animals quite a number of miles downwind. This is how sheep and cattle on the Ponteland farm caught the disease. But here a third contingency kicks in. Foot and mouth is often difficult to detect in sheep. Unless farmers are looking for it they may not suspect it at all. The animals may only be marginally ill. So whatever one's views about the Waughs, there is no particular reason to complain about the Ponteland farmer. He didn't know his animals were seriously ill. And neither did the trader who moved his sheep on to Longtown. And then there is a fourth contingency: the time of year, the late winter and the early spring. The virus survives for longer outside its hosts if the weather is cool and damp.

So far so good – or bad. But now the real puzzle. Why were there so many animals on the move on the British flood plain? Why was an abattoir in Essex taking pigs from Northumberland? Why were dealers from Devon buying sheep on the Scottish Borders?

First, on the question of abattoirs, it is partly a matter of numbers. They are limited in number, and animals often have to travel long distances to slaughter. 1970 there were about 2,000 slaughterhouses in the UK. In 2001 there were just 411.[25] Why? The answer is controversial, but it involves both: economics and politics. One: the food wholesale and retail industry has become centralised and big supermarket purchasers want to deal with a limited number of suppliers. Two: because it has become costly to negotiate the networks of UK and EU legislation, and every slaughterhouse needs a resident vet. With BSE and other food scares rules of hygiene have become strict and costly, and the paperwork is considerable. So many abattoirs have closed their doors because it just doesn't pay.[26]

Second, on the movement of sheep. Again the answer is: economics and politics. Sheep trading and droving are scarcely new professions, but in the UK sheep are moved long distances for a number of reasons. First, many are bred on upland areas, and are brought down for sale in spring and autumn. Second, the economics of the industry are dependent upon large-scale national and international movements. Most of those who eat lamb do not live near the farms on which the sheep are reared, and tastes for cuts vary from one place to another.[27] The industry has been national and international for at least 100 years. Third, as I've just suggested, the number of abattoirs has been greatly reduced. 'Local' lamb may come from the locality, but there is a high probability that it has travelled hundreds of miles between the farm and the butcher. And fourth, there is the effect of the CAP. This is not the place to explore this controversial institution, but the essential point is quickly made. Much sheep farming income (50% for upland flocks) comes from the CAP[28]. This works through 'headage', a payment per animal. Farmers who don't reach their headage quota on the due date, March 1st, are penalised. And, though there is debate, this is probably one of the more important reasons for the massive movement of sheep during the early part of the year. In 2001 perhaps *two million* were traded in January and February, in part because farmers topped up their quotas.[29] This was the set of flows that, more than any other, carried the foot and mouth virus, and turned the leak into a flood.

Conclusions

Between19th February and 30th September, 2,030 premises, including slaughterhouses but especially farms, were declared infected, and their animals were culled. Pre-emptive culling was carried out on a further 8,131 premises.[30] Nearly six and a half million animals were slaughtered, and their carcasses disposed of, producing profound grief for many farmers, iconic pictures of pyres for those who followed the disaster through the national media, and the never-to-be-forgotten smell of burning for those who live in the north of Cumbria or in Devon. The government incurred about £3bn direct and indirect costs, and on some estimates the epidemic cost in the region of

£8bn.[31] This heroic effort was, in the end, rewarded with success. The UK regained its disease free status on 15th January 2002 (three months after the last case) and this was ratified by the OIE on January 22.

Almost no one died as a direct consequence of the epidemic. But in many areas people were marooned for weeks or months on their farms. The countryside was effectively closed to visitors for much of the spring and summer of 2001. The tourist industry, and more generally the rural economy was severely damaged. Many were hurt economically, socially, personally, spiritually. And many questions were asked: why are we doing this? Is this a good way to live? Is it not time for rural economies to move on?

There are many, varied, and controversial answers to all of these questions. Some, for instance, incline to the view that the government response to the crisis was captured by the agricultural industry, and call for more joined-up policymaking and, more generally, for a holistic approach both to agriculture, and to the overall rural economy.[32] Others, both academic and otherwise, have argued that the disaster can be treated as a system failure – and was indeed experienced as such by many of those involved.[33]

My analysis, in terms of the materialities of flows and mobilities, leads me in the latter direction. Thus the flood control metaphor has its merits. It nicely dramatises the dynamic of the risk society and the precariousness of what may otherwise appear to be advantageous sociotechnical arrangements. It draws attention to the barriers and the dikes behind which we shelter from the flows. But this is where, in this straightforward form, it reaches its limits. This is because we are dealing not with one flow, the flow of a virus, but a pattern, a web, of partially connected and different flows with criss-crossing barriers, and it is the intersection of these different flows and their levées that produces the potential for leaks. Trade, economics, personal movements, policy regimes, even safety and hygiene systems, *all* of these are regimes of flow, all foster mobilities, all imply barriers, and all of them, their intersections and the intersections between their barriers, play their part.

There are other metaphors for the risk society. One that is helpful comes from the writing of Charles Perrow.[34] He is concerned with sociotechnical systems such as chemical plants, air traffic control systems, and nuclear power stations, and he works by distinguishing two dimensions. Dimension one is *coupling*. Some systems, he writes, are *tightly coupled*. Things flow rapidly through them – or at any rate too rapidly or awkwardly to allow successful intervention. By contrast others are loosely coupled. In these the flows are slow, or shaped in a way that permits intervention. Dimension two is *complexity*. Some systems are complex because the flows ramify off in all sorts of directions, and there are many connections, side-channels, mobilities. Others are linear, not complex. Here the flows are relatively straightforward and tend to move in one direction.

Perrow goes on to make the following crucial observation. When things go wrong in systems where the flows are *both* quick *and* complex then the consequences are unpredictable, difficult to control, and are likely to get out of hand. This overflowing is what he calls a *normal accident*, normal because it can *be expected. The classic* case is a nuclear power station. When something goes wrong it goes wrong quickly, and is liable to ramify unpredictably through the system. There is a high risk that such turbulent flows will break through the barriers that are supposed to keep them in place. Three Mile Island was a close call, and at Chernobyl this actually happened.

Perrow's final observation has to do with the level of hazard. If the consequences of a failing system and its escaping flows are dangerous then, he says, we need to take a *political* decision not to create such a system in the first place. This is his view of nuclear power. It is only a matter of time, he says, and something will go wrong with catastrophic consequences. Witness Chernobyl.

Some doubt Perrow's conclusions. They argue that a culture of safety can overcome the intrinsic dangers of tightly coupled and complex systems, and the cases they point to – for instance air traffic control – are indeed impressive.[35] However, the extent to which a high reliability culture can ensure safety is questionable. In a complex system with rapid flows, normal accidents are always waiting to happen, and happen they will – as various air traffic accidents suggest.[36] But suppose for a moment that they *are right*, and then apply the whole argument to the various material flows of agriculture: beasts, micro-organisms, people, money, trucks and feed. These various flows are certainly *complex*, indeed unknowably so, and often they move fast too, too fast for intervention. The barriers holding them apart are unpredictably reliable. As we have seen, the virus was spread around the country before anyone knew that it had even arrived. In agriculture we are dealing, then, with a system that is prone to normal accidents. The foot and mouth outbreak *is* a normal accident, nothing more, nothing less.

Now include the argument about culture. Is there a culture of safety in the industry? The question is unanswerable in general. At Cheale's for instance, the response is no doubt yes. This was a well-run outfit, with good drovers, a competent and responsible vet, and its paperwork was in good order. At Burnside farm, self-evidently, the answer is no. The Waughs were not, shall we say, deeply committed to a culture of safety. So here is the obvious conclusion: notwithstanding the homilies and the policies, and notwithstanding their partial success, *it is not possible to engineer a culture of safety across the whole of the agricultural system.* The very idea is utopian. What may, perhaps, be possible in a nuclear power station (though even this is uncertain) is inconceivable for agriculture.

Actually, the reality is somewhat worse than this. This is because good practice in one part of the system, a culture of safety, has potentially disastrous side-effects elsewhere. Why do animals move so much in the UK? We've seen that this is for various reasons, but one of them has to do with hygiene and food safety. After the late 'eighties customers got worried about eating meat products that might be contaminated by the prions that had leaked into the flows of feed, of animals and human food. Exports were affected. So how to keep the prions out? As we know various policies were implemented[37]. One was the tighter regulation of slaughterhouses. This is one of the reason that many closed their doors, and one of the reasons that animals now have to move longer distances to slaughter. Arguably, then, the response to the BSE scare, the creation of safer flows in the food chain, actually contributed to the size of the foot and mouth epidemic.[0]

Where, then, does all this leave us? How might we think about this system, the 'risk agriculture' in which we are implicated? There are many possibilities, but Perrow's analysis is a useful tool for thinking about material flows, barriers and vulnerabilities.

Flows that move too fast for intervention, and flows that ramify and connect together in unpredictable ways – these are the precursors to breakdown and, if the stakes are high enough, to catastrophe as well. But there is something else here too, which has to do with *uniformity*. The hydraulic engineering implied in controlling and delineating flows is also part of a process of standardisation. The hope is that *what flows* can be controlled, specified, and held stable. Healthy animals can be kept healthy, and feedstuffs can be kept virus- (or prion-) free. Refrigerated meat can be kept apart from inappropriate bacteria on its way from the slaughterhouse to the dining room table. This is one part of the engineering of fluid uniformity, the creation of what Latour (1990) calls 'immutable mobiles'.

Another part of this engineering is the hope, the aspiration, to regulate the relations between the flows of materials in particular and chosen ways, such that there are proper *barriers* (for instance to keep viruses and animals apart), or there are appropriate *exchanges* (for instance, the interactions between attenuated strains of viruses in vaccinations and the animals themselves). In contemporary industrialised agriculture all of this fluid engineering, the engineering of flows, barriers and exchanges, is attempted to an ambitious degree. The aspiration is to standardise flows and exchanges on a global scale. As a part of this, the attempt is made to render whole regions of the world uniform too – for instance, drained of the foot and mouth virus.

The empirical case – and Perrow's analysis – suggest that this is possible, but only precariously. The complexities of the intersections of the endless regimes of flow and the patchiness of any culture of safety, suggest that many parts of global agriculture are normal accidents that are waiting to happen. But if this is right, then it might be wise to think about a global fluid mechanics that is less prone to breakdown, less dependent on such leaky barriers. It might be sensible to imagine an agriculture that is less vulnerable, less dependent on the aspiration to uniformity, and one that depends less upon surveillance and the need for centred visibility.[39]

Notes

[1] I am grateful to Kristin Asdal, Kai Erikson, Steve Hinchliffe, Maggie Mort, Annemarie Mol, Ingunn Moser, Peter Peters, Mimi Sheller, Vicky Singleton, John Urry and Sue Wrennall for discussion of complex mobilities, agricultural and otherwise.

[2] This is the topic of a fine 1994 BBC Horizon programme, 'After the Flood'. See also US Army Corps of Engineers (2003), Walker et al. (1994), Larson (1996) and Johnson et al. (2003).

[3] I want to avoid the assumption that there is a natural state of being, a 'natural' nature out there. No doubt there are many different natures, and this is one of them, one that has been created in the process of trying to engineer the river.

[4] See Directorate General of Public Works and Water Management (1999, 17).

[5] See Massey (1999).

[6] People don't catch the disease though they may act as vectors, carriers, for the virus.

[7] See McNeill (1979).

[8] Sue Wrennall notes (private communication) that the phrase 'mostly doesn't kill its hosts' perhaps derives from scientific discourse, and misses out on the materialities of the disease and possible ways of nursing it. Nursing an animal through the disease may be possible, and indeed economically necessary in the Third World if the farmer has a very few animals. The situation is very different in the First World.

[9] See The Royal Society (2002, 44).

[10] This is discussed in The Royal Society (2002), and especially Chapter 3.

[11] Vaccination is important for this classification because, at least until very recently, the laboratory tests for foot and mouth have been unable to distinguish between animals that have suffered from the disease, and those that have been vaccinated. This is starting to change, and scientific innovations (which make it possible to distinguish between structural and non-structural proteins) may have substantial implications for the flows of world trade. See The Royal Society (2002, 99).

[12] The Royal Society (2002, 40).

[13] The Royal Society (2002, 90).

[14] Similar effects may be generated with fires and firebreaks. See Davis (1996).

[15] The Royal Society (2002, 22).

[16] See House of Commons Committee on Agriculture and House of Commons Committee on Environment (2001), 31st October, answer to question 36.

[17] Department for Environment (2002, 29).

[18] National Statistics (2001).

[19] Here is the process. One: they are stunned. Two: they are killed with a shot to the head. Three: they are pithed. Four: they are hung up on an overhead conveyer. And then, depending on the animal, they are gutted. Sliced in two. Their brains and spinal chords are removed. They are butchered. And the cuts may be deboned too.

[20] Department for Environment (2002, 12).

[21] The Ministry of Agriculture, Fisheries and Food (MAFF) was absorbed into a larger Ministry, the Department for Environment, Food and Rural Affairs (DEFRA) after the UK general election on June 7th, 2001, in part as a response to the foot and mouth crisis.

[22] Foot and Mouth Disease 2001: Lessons to be Learned Inquiry (2002, 57).

[23] On 28th June, 2002, Bobby Waugh was found guilty of a series of offences, including the failure to alert officials about the state of health of the pigs on the farm, and feeding pigs unprocessed waste. See Wilson (2002).

[24] Foot and Mouth Disease 2001: Lessons to be Learned Inquiry (2002, 51).

[25] The Royal Society (2002), page 51.

[26] See, for instance, Fort (2001). There is an anti-EU version of this story: that EC regulations are strangling British abattoirs. And then there is an anti-UK government story, which says that MAFF has used EC regulations for its own ends. For a detailed, anti MAFF account, see Kennard (2001).

[27] Cumbria Foot and Mouth Disease Inquiry (2002), page 37.

[28] The Royal Society (2002, 12).

[29] Foot and Mouth Disease 2001: Lessons to be Learned Inquiry (2002, 30).

[30] The culling policy was developed on a somewhat ad hoc and indeed controversial basis in the early weeks of the outbreak, on the basis of epidemiological advice. For further details and discussion of this see Bickerstaff and Simmons (2004).

[31] Foot and Mouth Disease 2001: Lessons to be Learned Inquiry (2002, Appendix A).

[32] See, for instance, Foot and Mouth Disease 2001: Lessons to be Learned Inquiry, 2002 , and amongst academic commentators, Ward *et al*. (2004) and Campbell (2003)

[33] See, for instance, Poortinga *et al.* (2004). And in the context of policy, see Foot and Mouth Disease 2001: Lessons to be Learned Inquiry (2002, 7)

[34] See Perrow (1999).

[35] This contrasting approach is called high reliability theory. See, for instance, Roberts (1989; 1990a; 1990b) and Roberts *et al.* (1994).

[36] See the frightening and instructive study by Scott Sagan (1993) on nuclear weapon safety in the United States Air Force. Sagan started his study believing that a high reliability culture could contain the dangers inherent in complex and hazardous systems, but changed his view in the course of his study.

[37] For a fine account of the BSE crisis see Hinchliffe (2001), and also, in a more summary form, Hinchliffe (2000).

[38] That safety systems may lead to lack of safety is well recognised by those in the safety industry. It is one of the reason why experts are often sceptical about safety panaceas proposed by well-meaning outsiders after accidents. This is discussed by Perrow who notes that safety systems may add to the complexity of the system, and so to its unpredictability.

[39] The reference is to James C. Scott's magnificent (1998), *Seeing Like a State*. But see also Bickerstaff's and Simmons' (2004) comments on the relationship between the centering characteristics of epidemiology and those of state policy in which the former, unlike the complexities of veterinary practice, offered the capacity for overall control (and a version of visibility) sought by the latter.

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Coexistence between GM and non-GM crops: contested political geographies of Europe

Tereza Stöckelová

There are three key focal points that are key to the controversy over genetically modified organisms (GMOs) in Europe as it has culminated in the recent years: traceability and labelling, coexistence between GM agriculture with conventional and organic, and field trials with GMOs. I argue that the three points are not unique for the GMO case but represent, articulate and extend more general tendencies or tensions in contemporary European society. Negotiations over traceability and labelling have closely linked with enacting political consumerism and extending public accountability. In the controversy over coexistence, the political geography of Europe is at stake, involving relations between the European Commission (EC), member states and regions, the distribution of powers, competencies and responsibilities among them, and the constitution of public spaces at the European and at regional levels. In the controversy over field trials, at issue are the orientation of contemporary research, its public accountability and the in/dependence of research on industrial and other interests. In this paper I explore the issue of coexistence and contested political geographies of Europe.

Tereza Stöckelová

Coexistence between GM and non-GM crops: contested political geographies of Europe

One of the most significant concerns related to GMOs is genetic pollution. Expert reports, as well as the experience of countries which have been growing GMO for several years, show that genetic contamination of non-GMO crops with modified genetic material can never be completely prevented (cf. e.g. Joint Research Centre EC, Institute for Prospective Technological Studies 2002). Genetic contamination is at the centre of the coexistence debate.

In July 2003, the EC published Recommendation on guidelines for the development of national strategies and best practices to ensure the co-existence of genetically modified crops with conventional and organic farming (European Commission 2003a). Ensuring coexistence was defined as one of the key conditions for the lifting of the six-year European moratorium (1998-2004) on authorisations of new GMOs. The Environmental Council initially declared this moratorium in reaction to public opposition to GMOs and discontent with the regulation of the technology in the EU. The published Recommendation, however, generated dissent and doubts rather than satisfying those who criticise the introduction of GM agriculture in Europe, including the European Parliament (cf. European Parliament, Committee on Agriculture and Rural Development 2003). How are we to understand this dissatisfaction? In the following text we will focus on the EC document, on the social, political and technical conditions inscribed into it, and we will explore them in contrast with assumptions of the opponents of coexistence, which are visible not only in textual reactions but also in the launch of new campaigns and activities. The coalition of opponents is diverse and varies from country to country. However, there are some key actors: environmentalist NGOs working in the member states or at the European level: Friends of the Earth and Greenpeace; associations of smaller, often organic farmers (IFOAM EU, Confederation paysanne (F) and Confederazione nazionale Coldiretti (I)); and representatives of some European regions (Upper Austria, Tuscany and Wales are especially active regions). A few members of the European Parliament can also be counted among the fierce critics (cf. European Parliament, Committee on Agriculture and Rural Development 2003).

The starting point of the coexistence debate is the introduction of GMOs into Europe. The question is how to regulate introduction in such a way as to minimise interference with and limits on other types of agricultural production. New agricultural biotechnologies will extend consumer choice to GMO foods, and should not reduce the choice of foods produced in other ways. According to an EC press release (European Commission 2003b): “The issue of co-existence refers to the ability of farmers to provide consumers with a choice between conventional, organic and GM products that comply with European labelling and purity standards.” The Commission considers these three types of agricultural production as substantially commensurable and non-exclusive under adequately set conditions. These conditions involve not only agricultural procedures suggested in the Recommendation (such as isolation distances between GM and non-GM crops, or buffer zones) to prevent contamination, but also newly set labelling and purity standards, which authorise specific limits for conventional and organic crops that may be contaminated by GM material. The regulations of European Parliament and Council 1829/2003 and 1830/2003 establish a threshold of 0.9% for the labelling of products produced from GMOs. There is no duty to label products falling below this threshold if the concerned GMO is authorised in the EU and its presence is adventitious or technically unavoidable[1]. The threshold is adjusted to the level of contamination that can be realistically achieved in Europe after the introduction of GM crops without major costly changes in current agricultural practices. The Recommendation defines them as maximal values, but de facto also as minimal values. “Measures for co-existence should be efficient and cost-effective, and proportionate. They shall not go beyond what is necessary in order to ensure that adventitious traces of GMOs stay below the tolerance thresholds set out in Community legislation. They should avoid any unnecessary burden for farmers, seed producers, co-operatives and other actors associated with any production type” (European Commission 2003a: 9).

On the other end of the spectrum, those who criticise the introduction of GM agriculture start from a “zero tolerance” of genetic contamination, particularly with respect to organic farming. The key question here is whether coexistence is even possible. Their answer to this is that it is not. Growing GM crops in Europe would not extend consumer choice but, on the contrary, destroy it. The ability to choose ‘genuine’ GMO-free foods would become impossible. The critical coalition refuses any thresholds for seed purity (the threshold proposed by the EC is 0.3%) and considers the threshold of 0.9%, set for the labelling of raw material and foods, to be too high (cf. e.g. Civil society urges... 2003).

Another substantial topic of controversy is related to the level at which GMO regulation in the EU occurs. The competence to authorise the cultivation and introduction of GMOs on the market belongs to the Council of Environment ministers. Council decisions are binding for the entire EU. Article 19 of Directive 2001/18/EU establishes the right of member states to ban authorised GMOs on their territory to the extent that the state can justify the ban because of specific environmental or health-related risks. The procedure of banning, however, is defined as an exception that must be justified by scientific evidence; the European single market is the rule. However, the problem of coexistence and liability for possible genetic contamination is to be solved by member states. “The conditions under which European farmers work are extremely diverse. Farm and field sizes, production systems, crop rotations and cropping patterns, as well as natural conditions, vary enormously across Europe. This variability needs to be taken into account when devising, implementing, monitoring and co-ordinating co-existence measures. The measures that are applied must be specific to the farm structures, farming systems, cropping patterns and natural conditions in a region" (European Commission 2003a). In the view of the Commission, Europe is homogeneous enough for blanket authorisation of GM crops for cultivation, but too heterogeneous for binding coexistence and liability rules to be set at the European level.

Critics of GMO introduction have precisely the opposite position. They appeal for a European legal framework for coexistence and liability (cf. e.g. Friends of the Earth Europe, undated). As we will see later, they support and have stimulated initiatives which make a rule from the exception of the national bans.

The final key feature of the Recommendation is the strict separation of economic concerns from environmental and health-related risks. While the risks are dealt with in the framework of Directive 2001/18/EC and Regulation 1829/2003, the Recommendation and the concept of coexistence is related exclusively to possible conflicts with the economic interests of farmers. The primary concern is economic losses which could result from contamination.

Those who criticise the concept of coexistence as proposed by the Commission link the different concerns about coexistence. They persistently raise questions about the safety of GM crops with respect to human health and the environment, and at the same time advocate the cultural and agricultural traditions of the regions. As we will see in the analysis later, the political sovereignty of regions is also a key issue. Economic concerns are crucial, but they are not the only concerns related to the introduction of GM crops and the issue of coexistence in Europe.

We can summarise the positions of the two sides in the following table.

European commission‘s coexistence	and its critics
starting point: introduction of GM agriculture	starting point: zero tolerance for contamination
key question: what labelling and seed purity standards? (0.9% for labelling)	key question: is coexistence at all possible? (coexistence impossible)
coexistence ensuring consumer choice (of GM foods)	coexistence destroying consumer choice (of genuine non-GM foods)
claiming co-existence and liability measures national or regional (while authorisation and standards European)	claiming co-existence and liability measures at the European level (while de facto performing national and regional authorisation)
thresholds as maximal and at the same time minimal contamination levels	thresholds rejected or at the detection level
coexistence related to economic aspects only, not health and environmental or cultural ones (purification)	coexistence related to diversity of concerns, including environmental and health or cultural ones (mixing)
reasoning: why should GM agriculture be excluded from Europe?	reasoning: why should GM agriculture be included into Europe?

From the EC's perspective, coexistence becomes a tool for introducing GM-based agriculture into Europe. Its critics on the countrary, try to redefine and rework coexistence and to use proposed principles and measures for preventing the introduction of GM crops into Europe. In the following section we will focus on their effort to enforce and make real their own interpretation of coexistence, first of all by means of the concept of 'GMO-free zones'.

GMO-free zones, GMO-free Europe?

The first GMO-free region emerged in Europe long before the Commission published its coexistence policy in the Recommendation in July 2003. In 1999 the northern Italian region Molise declared itself GMO-free. Regions of Marche, Lazio and Tuscany did the same the following year, and other Italian regions gradually joined them. By 2005, 15 Italian regions held the status.[2] The decisions were made in regional parliaments; in the case of Tuscany, the declaration was also ratified by the national parliament. A number of towns and villages also declared themselves GMO-free during the period. Today, over 80% of Italian territory has the GMO-free status. An Italian law on coexistence passed in January 2005 confirmed the right of regions to declare their status. The legality of this with respect to European legislation, however, is not clear, and the declarations could be challenged by the EC in the near future.

In France, the campaign No GMO in my municipality (Pas d'OGM dans ma commune) started in 2001.[3] As part of the campaign, more than 1500 mayors declared their municipalities GMO-free. These declarations concern, firstly, field trials and the exclusion of GM foods from meals provided by municipal services. In some instances, prefects (who represent the French state in *departements*, the French administrative units) challenged these decisions as being illegal, and, thus far, have won in each case. On the regional level, 15 of 22 regions declared their "will" to be GMO-free,[4] and the controversy over the legality and legitimacy of the declarations continues.

In 2002, the regional parliament of Upper Austria passed a Provincial Act prohibiting the cultivation of GMOs and the use of transgenic animals for breeding purposes (excluding those for scientific and research reasons in contained spaces) for three years. This legal norm refers firstly to Article 95 of the EC Treaty, which stipulates that a member state has the right to constrain the European single market on the basis of scientific evidence related to the protection of the environment or the working environment. The EC then investigates whether the national measure represents arbitrary discrimination or a disguised restriction on trade and, depending upon the result of this investigation, whether the measure should be approved or rejected. In the case of Upper Austria, the Commission rejected the measures and declared them illegal (September 2003). Upper Austria appealed the decision at the European Court of Justice but the Court confirmed the Commission's decision in October 2005.

The Friends of the Earth UK (FoE UK) campaign GMO-free Britain, begun in October 2002, is based on different legal arguments, and takes as its foundation Article 19 of the Directive 2001/18/EC on the deliberate release into the environment of GMOs, according to which a member state can request to be exempted from having to permit the introduction of authorised GMOs on its territory or a part. The request for the exemption must be based on scientific evidence related to environmental or health-related concerns and must be territory specific (number and distribution of organic farms, wild relatives, beekeepers). FoE UK advises using economic and social arguments as well, though they are not explicitly mentioned in the article of the Directive (Friends of the Earth UK 2003a). Compared to the decision in Upper Austria, a request for an exemption is crop specific and does not allow for gaining a blanket ban on GM crops in general. Interestingly, the strategy of FoE UK is to interpret Directive 2001/18/EC so as to achieve 'coexistence' in a clear contradiction with the intention of the coexistence policy. The campaign links the issue of safety with economic and political concerns, something the European legislation strives to separate. In the frame of the campaign, more than 60 areas are declared GMO-free, including the whole region of Wales. FoE UK is convinced that if a large number of places ask for an exemption from European-wide authorisation, this can influence decision-making at the European level.

The reaction of the EC to the initial declarations of GMO-free regions was strongly negative. However, the EC has been gradually changing its approach. In September 2003, the European Commissioner for Agriculture and Fisheries at the time, Franz Fischler, declared that "the co-operation among farmers in a region and their exchange of information and experiences will be of particular importance. For instance, I would support the idea of farmers joining on a voluntary basis to create zones of GM-free production or bio-regions."[5] Opponents of GMO welcomed the declaration as an important advance in the Commission's approach to the issue.[6] Here the Commission supports what it could never block in practice: attempts to create GMO-free regions on a voluntary basis; and it keeps rejecting political declarations of GMO-free regions and areas and refuses to admit that coexistence is not solely the concern of (individual) farmers, and that the decision about its form is a political choice with widespread consequences for society and the environment. By May 2003, 162 European regions or provinces and 4500 local authorities had declared that they were GMO-free or that they wanted to limit the cultivation of GM crops.[7]

Differing member state contexts

The activities of the opposition briefly sketched here takes place in the context of European GM legislation and EC policy. Also, these activities are taking place in member states with rather different and often changing GM policies. For example, we can see above that while in France the state (prefects) may challenge the decisions of municipalities declaring themselves GMO-free, and call such actions illegal, in the Tuscany region similar declarations were ratified by the Italian parliament. The policies and politics of member states differ. Let us look in more detail at some of the differences.

In the 1990s, many European states went through a crisis of legitimacy related to their environmental, food and health-related policies. An extreme example would be the case of BSE in Britain. A study by the European Environment Agency (2001), *Late lessons from early warnings: the precautionary principle 1896–2000*, summarises it in the following way:

> BSE was always going to be a difficult issue to apply a precautionary approach to once it had been discovered in the UK cattle herd. In November 1986, many infected cattle had already been consumed and even at that stage it would have been hugely expensive to eradicate.
>
> Nevertheless, there was a great deal which the government could have done to diminish the risks to consumers, and in the long run to the meat industry and to the Exchequer, especially if they had openly acknowledged what the scientific evidence did, and did not, indicate. Instead the UK government claimed to be prudently protecting public health, while in practice it covertly subordinated the protection of public health to the support of agricultural sales, with a view also to minimising state intervention and public expenditure. The regulations which were set were, consequently, too little and too late, and even then they were not properly enforced. Moreover too little was invested in scientific research and the involvement of independent scientists was actively discouraged (pp 164-165).

European states have tried to remedy the damages to their legitimacy, the results of which have been the recent scandals, but at the same time they find themselves under pressure from different sides: industry lobbies, NGOs, farmers, media and the omnipresent “public” with a range of incompatible claims for welfare, security and consumer choice. The position of European states is unstable. This instability was well expressed by the Environmental Council ministers when they declared a moratorium and suspended the GMO authorisation processes between the years 1998-2004. While new authorisations were suspended, it was not a principle rejection of GMOs. The moratorium thus did not explicitly resist the pressure being applied by the US and biotechnological companies, nor the pressure from NGOs and a public mobilised against the use of biotechnology.[8] The moratorium offered a convenient strategy for member states, and it is symptomatic that the moratorium was lifted not by a vote of the Environmental Council ministers (representing member states) but by a decision by the Commission.

The GM policy of some member states went beyond the moratorium. Referring to Article 16 of Directive 90/220/EEC, some states banned GMOs that had already been authorised on their territory. These bans concerned swede rape MS1/RF1 (France 1998), maize Bt 176 (Austria 1997, Luxembourg 1997, Germany 1999), swede rape Topas 19/2 (Greece 1998, France 1998) and Bt maize MON 810 (Austria

1999). The Commission proposed withdrawing the bans, but during the vote of the Regulatory Committee in December 2004 the withdrawal was supported only by the United Kingdom, the Netherlands and Portugal (in the case of MNO 810, also by the Czech Republic and Poland). This result was confirmed by the vote of the Council of Environment Ministers in June 2005.[9]

We can also see interesting differences when comparing the voting record of the new EU states. The Czech Republic and Latvia were the only countries that supported the proposals of the Commission to authorise both swede rape GT 73 (voting on June 16, 2004) and maize NK 603 (voting on June 28, 2004), while Hungary, Cyprus and Malta in both cases were against the proposal. Moreover, Hungary banned the cultivation and import of Bt MON 810 in January 2005,[10] thus clearly joining those member states that expressed resistance towards GMOs. However, policies are unstable, and during a new vote on swede rape GT 73 in December 2004, the Czech Republic abstained and Latvia voted against authorisation.[11]

The Recommendation of the Commission for Ensuring Coexistence, published in July 2003, asked member state governments to develop coexistence plans and establish liability frameworks. The first legislative propositions started to appear in 2004 and they show, in accord with the Commission's assumption, considerable diversity. In many countries such plans are still in the consultation and preparation phase. Let us take a closer look at four of the completed legislative norms.

In May 2005 the Danish parliament passed a law on coexistence. The liability and compensation scheme establishes a limit on genetic contamination of 0.9%, and this limit only concerns contamination occurring within a narrowly defined zone outside the separation distance around GM fields. The law sets separation distances for different crops (e.g. 200m for maize). It also stipulates that a GM farmer has the duty to inform his neighbours about his cultivation of GM crops. Further, it establishes a public register of plots with GM crops. It does not address the issue of GMO-free zones.

Under a German law was passed in the parliament in November 2004, the liability and compensation scheme is not limited to the 0.9% threshold, as German legislators assume that even products with lower levels of contamination may be difficult to sell, resulting in economic losses even for farmers under the limit. Liability and compensation are to be claimed in civil litigation. If a farmer suffers damages, he files a suit against the GMO farmer directly. Subsequently, the GM farmer could possibly file a suit against the GM seed producer for providing inadequate instructions for cultivating GM crops. Separation distances are set for different crops (e.g. 1000m for maize). The law establishes a public register of plots with GM crops and does not address the issue of GMO-free zones.

In the Netherlands it was decided to solve the issue not by means of a law but through a legally binding agreement between four parties: two of them representing farmers, one representing biological farmers and one being an association of plant breeders (including some Dutch biotech companies). The compensation scheme should be financed via a fund into which all participants, as well as the state (taxpayers), contribute. The separation distances are significantly less than in other member states (e.g. 25m for conventional maize and 250m for organic maize). The register of growers is not public and is accessible only to those with a justifiable interest.

An Italian law passed in January 2005 delegates decision-making about concrete measures to the regions, which should prepare their own coexistence plans. The Minister of Agriculture and Forestry issues only a decree defining the framework. As for liability and compensation, the law stipulates that "those who expose other farmers to direct and indirect damages caused by non-compliance with the measures in the plan shall be liable for the said damages. The burden of proof arising from non-compliance with the measures contained in the plan shall be incumbent upon persons who do not comply with the said measures." The law establishes as a principle the avoidance of any adventitious contamination and does not state any thresholds. It explicitly states that the regions have the right to declare GM-free zones on their territories.

Political geographies of Europe

As we have seen thus far, in recent years many European regions, towns and villages have declared themselves to be GM-free. This has been happening in defiance of the increase in pressure from the Commission that GM crops be introduced into European agriculture. The legal status of GM-free declarations has not been resolved. Support by the governments of the member states varies from state to state. In the coming years, the strength of these declarations will be performed and tested in struggles for factual cultivation of GM crops. The remarkable feature of the struggles, controversies and tensions is that they do not relate only to physical space and farmland but also to the political geography of Europe, to the distribution of power and knowledge across Europe. The geography does not have a stable shape that would precede the controversies. Rather, it is being redefined, weakened or strengthened in and though them. In the following pages we will analyse the ideas and actions of the EC, Friends of the Earth Europe (FoEE) and the Network of GMO-free Regions. These actors may co-operate or be in conflict; they may complement or subvert each other. We will be interested in the political geographies of Europe that they pursue, in co-operation or against each other, and that they try to enforce.

At stake in these controversies is what the political geography of Europe will look like in the future rather than what it "really" is at the moment. Controversies do not take place in the frame of fixed political geographies but, on the contrary, they change and redefine them. In an article in the *Guardian*, Mayer and Grove-White (2005) suggest a perspective in which the GMO issue is not being tackled in the frame of firmly established institutions, competencies and trustworthiness, but rather that it is an issue through which these institutions and their qualities are tested and by which they could and should be changed. The article addresses the behaviour of the Commission in the controversy with the United States at the World Trade Organisation, in which the United States, Canada and Argentina are challenging the European moratorium on GMOs and the regulatory model requiring traceability and labelling on the grounds that they represent trade barriers.

> The commission is playing a dangerous game. Member states and their populations are divided even on whether the two varieties of GM maize recently approved satisfy the EU's own regulatory criteria. However, the commission appears to have decided that satisfying the US is more important than respecting the continued concern among the people and governments of member states. It is a course of action that could have reverberations for the European project as a whole.
>
> /.../ It is not only Europe's institutions that are being tested by the GM dispute. The already tattered credibility of the WTO itself is also at stake.

The authors present (and perform) the GMO controversy as a strong test case for the European project. Inspired by their perspective, we try to study the controversy as a case of political geographies in the making. We will first focus briefly on the EC and FoEE – as we have already discussed much of their papers and activities – followed by more empirical detail on the Network of GMO-free Regions.

Heterogeneous but homogeneous Europe: The European Commission

Decisions on the authorisation of GM crops are made at the European level and are obligatory for all member states, but the responsibility for developing and ensuring coexistence measures is delegated to member states by the Recommendation. The liability for consequences of the technology should be resolved only in individual member states – while the Commission tries to block or at least limit the solution through GMO-free zones. This contradiction is even more significant in light of the fact that the decision in 2004 to lift the moratorium on GMOs was not made according to the standard procedure, i.e. a vote of the Council of Environmental Ministers (which failed to reach an agreement for lifting it), but by a decision of the Commission. "In effect, the bureaucracy stepped in and forced through a particular outcome, despite continuing political disagreement across the EU. This now looks set to become a growing pattern," write Sue Mayer and Robin Grove-White (2005). After the moratorium was lifted, all new GMOs were authorised on the basis of the Commission's bureaucratic decisions.

Thus in the eyes of the Commission, the European Union is sufficiently homogeneous that authorisation can be European-wide. Furthermore, this definition of the situation further enforces the homogeneity in practice, as it will result in GMOs being spread across Europe, and the 0.9% level of genetic contamination would characterise European agriculture. According to Directive 2001/18/EC, exemptions from this rule (in terms of states or GM-free zones) must be based on scientific evidence. However, according to the Commission, European agriculture is too heterogeneous for coexistence and liability measures to be established at the European level.

The position of the Commission towards coexistence is evolving. In 2005, the new European Commissioner for Agriculture and Rural Development, Mariann Fischer Boel, announced the intention to create a European legal framework for coexistence. How should we understand this? On the one hand, it seems that in making this move she will accommodate NGOs campaigning for coexistence at the European level. These NGOs have been demanding an obligatory European framework since the debate started. On the other hand, we have to consider the context of developments in different member states. Germany and Italy passed coexistence norms very unfavourable for the introduction of GM crops. In Italy, in particular, the law shifts the rights and obligations related to coexistence (as well as that of declaring GM-free zones) to the regions, which for the most part have refused the cultivation of GM crops on principle. Establishing the legal regime of coexistence at the European level could thus also become a means of preventing further norms of this kind, and of making invalid those already passed.

Throughout this development, the political geography of Europe promoted by the Commission seems to remain rather stable. Let us summarise its key features: Governance of GMOs should be based on knowledge that is scientific and objective (also in terms of economic objectivity). Different types of expertise should be distinguishable in separate categories (environmental risks, health risks, economic concerns) and be kept separate to be managed by different (expert) actors. Knowledge should be centralised and universal (in the case of authorisation procedures), and though it would sometimes be applied with regard to local specificities and conditions (coexistence measures), it is not local knowledge, but rather localised universal knowledge. Mainstream knowledge is invoked in decision-making processes, without acknowledging any uncertainty or conditions and paradigmatic constraints on knowledge production.[12] Power is exercised in a technocratic way. The standard procedures for voting by member states were bypassed by a decision of the Commission when the vote resulted in GMO authorisation being rejected. Although the issue of coexistence is in the competence of member states, the space delimited by the Commission for its possible shape is very narrow so that there is little room for member states to make political decisions. Political decisions are to be made by the Commission.

Decentralised Europe: Friends of the Earth Europe

The FoEE campaign on coexistence, GMO-free Europe, is based on the strategy of decentred interventions in local, regional, national and European contexts.[13] According to FoEE, if many places resist the introduction of GMOs, this can subvert the positive resolution of the EC. FoEE use their organisational network across and throughout Europe, and also mobilise citizens to further influence local and regional, as well as national and European policies, be it directly or indirectly. One of the objectives is to gain the support of the already established political structures.

Decentralised intervention is the first feature of the FoEE campaign. The second is aspiring to enact and mobilise European public space. Franz Seifert (2003) poses the question of whether the conflict over biotechnology has brought about the emergence of the European public space. His answer is that it has not, in spite of the fact that an anti-GMO mobilisation occurred simultaneously in many European states in the second half of the 1990s. "Simultaneousness and structural and semantic similitude of public controversies, however, do not hint at the fusion of various national publics. Rather they are due to their subjection to common structural (i.e. political, legal, economic, logistic) conditions" (Seifert 2003: 197). But similarly, with respect to the fact that the European Union, and its political structures, is not a fusion of nations, states or their political structures, but instead is a new reality added to the nation states and connecting them in new ways, we should not, I suggest, imagine the European public to be a fusion of the national publics. It seems to me much more reasonable to conceive the European public as another reality added to those of national publics, interfering with them, reconnecting them (or some of their elements), but not replacing them. We can note, by the way, that the supposed "insufficiencies" of the European public (limited participation, difficulties in sharing a language) can also be found to some extent in the "old good" national publics.

From this perspective, I would argue that the coexistence campaign of FoEE can be seen and studied as a European public initiative. It is Euro(de)centric and multilingual, though English is obviously its first language. Firstly, as part of the campaign there is a petition asking that the local and regional authorities be given the right to declare their area GMO-free. The petition is to be signed by all European local authorities and submitted to the EC. It is available in nine languages at the campaign web page[14] and it should be available in any European language through a network of contact centres in the different member states. Secondly, there is a European campaign guide available in six languages which, being aware of differences, counts on key similarities in member states and on the use of common strategies. The campaign addresses the physical space of Europe, and though interventions are localised the goal is a GM-free Europe. To some extent this is conditioned by the biological nature of GMOs and also by the common EU legislative framework, which both make physical places more entangled and dependent. Local decisions may have widespread consequences. The campaign is run through networking, by translating and decentring.

The FoEE campaign emphasises the political dimensions of the introduction of GM crops into Europe; at the same time, much is invested in producing, soliciting and identifying expertise (or contra-expertise). For example, during farm scale evaluations in the UK (2000-2003), when the government organised field trials with GM crops to provide evidence about the impact that cultivating GMO crops had on farmland biodiversity, FoE UK worked out a critical analyses of the design of the trials and, independent of government agencies, commissioned and gathered data about GM contamination related to the introduction of GM crops.[15] FoE UK stressed how their data conflicted with the official data.[16] Their strategy is thus to reveal the contradictions in expertise, alternative knowledge, and power relations in knowledge production.[17]

Regionalised Europe: The Network of GMO-free European Regions

In November 2003, ten European regions (Aquitaine-F, Basque Country-E, Limousin-F, Marches-I, Salzbourg-A, Schleswig-Holstein-D, Thrace-GR, Toscana-I, Upper-Austria-A and Wales-UK) asked the Commission to recognise the right of regions to declare themselves GM-free.[18] Two more regions (Burgenland-A and Highlands-UK) joined the ten regions during the conference in Linz on April 28, 2004, and together they established the Network of GMO-free European Regions. This initiative was also supported by the Assembly of European Regions,[19] which took part in the conference.

On September 14, 2004, the Assembly of European Regions and FoEE launched a common long-term campaign to protect traditional crops and products from the consequences of the introduction of new biotechnologies.

On January 22, 2005, the European conference on GMO-free regions, biodiversity and rural development took place in Berlin, which resulted in a petition being submitted to the EC and the Berlin Manifesto.

Finally, on February 4, 2005, the Network of GMO-free European Regions met representatives of local authorities in Florence and signed the Charter of the regions and local authorities of Europe on the subject of coexistence of genetically modified crops with traditional and organic farming (2005). The Network now has 20 members.[20]

Let us analyse a few quotations characterising these initiatives.

The European regions say NO to Genetically Modified Organisms (press release of the Assembly of European Regions, from April 29, 2004):

Regional representatives, scientists and environmental associations present in Linz affirmed, rightly, that the approval of the introduction of genetically modified crops without testing the long-term effect on environment and human health is irresponsible. However, nothing seems to be able to stop the approval for introduction of BT11 corn by the European Commission anymore. A large movement from *the European regions and their citizens* is thus necessary, to obtain that the current system at EU level become more democratic, more transparent and more respectful of the citizens' will, Mrs De Rose (Executive secretary for the AER Committee 'Regional Development' - TS) concluded.

The AER supports with much conviction these regions' initiative and is committed to spread it to all European regions. It will encourage *the development of a strategic alliance between European regions, scientific experts and Non Governmental Organisations*.

The Assembly of European Regions calls upon the EC to stop flooding the Common market with new GM-seeds (press release from September 7, 2004):

/.../ nearly two thousand regional and local authorities across Europe have declared themselves GMO-free areas, *challenging the European law on the single market*. By their decisions, supported by consumers, traditional producers and environmental associations, they want *to confront the risks* of contamination by GMOs and to protect their territory's traditional agriculture as well as products of designated origin.

The petition to the EC from January 2005 culminates as follows:

WE, the undersigned, believe that *in order to protect our local economy, culture, environment and health of our citizens*, EU law must include the democratic right of local and regional governments to decide whether GM crops can be cultivated in their given area (GMO-free Regions and areas 2005).

Berlin Manifesto for GMO-free Regions and Biodiversity in Europe elaborates, e.g., on the following points:

Our choice. We all share the fundamental human right to choose what we eat. Choices about the use of reproductive material in a common environment cannot be made individually, as they affect all people sharing these commons. Decisions about the use of genetically modified organisms (GMOs) and the shape of our landscape should *be made democratically in the regions and not be imposed by individual farmers, bureaucrats or companies*. Decisions can be wrong and thus should be open for change and reversal.

Our agricultural diversity. Agri-Culture is an important part of *our regional way of life*. Socio-economic and cultural impacts must be taken into account when introducing agro-technologies such as GMO. Most European regions have made the promotion of sustainable and organic farming and regional marketing priorities for their rural development. Where the right to farm without GMOs and without undue changes to the local agricultural practice can not be guaranteed, the introduction of GMOs must be prevented.

Our co-existence. In most cases and for most species there is no realistic chance for coexistence between GM and non-GM farming, just as there is none between silence and noise in a room. The highest standards of protection are required for local cultivars and their wild relatives. *The level of protection and standards of co-existence, including their costs, must be assessed and decided upon locally and regionally. Fair and sustainable coexistence* must prevail between neighbours and economic partners. It must not be forced upon their traditional practices and future development.

Our Europe. *The diversity of regions shapes the identity of Europe*. In a global economy we do need common European standards on food safety, transparency, liability, environmental and nature protection and market access. They should be designed *to serve and not to suppress the local and regional self-determination of the people of Europe*. We will defend these rights and duties and the beauties and joys of our regions throughout Europe.

Twenty European "GMO-free" regions sign a charter to preserve conventional and organic farming on their territory and call on European institutions to legislate on coexistence between crops (press release from January 7, 2004), quoting Claudio Martini, president of the region of Tuscany:

In Europe, there must be room for a model of agriculture which is based on a genuine identity, cultural characteristics, high-quality GMO-free products.

The selected quotations articulate several key themes. The first theme relates to the political positioning of regions. We read about regions and their citizens, democratic decision-making on the level of regions going against decisions imposed by actors from other levels, and about local and regional self-determination. According to *Le Monde*, the signing of the Charter "constitutes a significant development in the GMO controversy: it witnesses that the opposition does not consist only of environmental NGOs, farmers and consumers, but also of elected authorities who have the means, in various degrees, to exercise power" (Vingt régions européennes... 2005). We should not overlook the bi-directional aspect of support: regional politicians adopt the GMO issue as their own, support the struggles of environmentalist NGOs and thus provide the opposition with legitimacy in terms of a representative democracy, and the politicians are in turn strengthened by the GMO case when the public is mobilised against GMOs. Their positioning allies them with other actors. GMOs are an issue through which the concept of regional citizenship and regional public can be strengthened. Where the European public is still a vague actor, and member states' publics often see indecisive and ambiguous actions by their governments, regions offer a more effective principle of citizenship. This is why the *Le Monde* article about significant development is correct. The presence of politicians on the side of those opposing GM is not new, as there have been member state politicians on the national level supporting policies resisting the introduction of GMOs to the EU since the mid-1990s; however, rarely has this been a manifestation of an active anti-GMO stance, but rather a half-hearted reaction to public pressure. Regional politicians now relate to the case differently, in an openly positive way. After all, it is much more acceptable for a region to associate itself with (cultural and localising) tradition than it is for a nation state; the nation state is closely linked to the modernist idea of (technological and universalising) progress.

Another closely related theme articulates the relations between regions and the EU. The rhetoric is confrontational. Regions "challenge the law on the European single market", they 'confront risks' arising from decisions of the Commission, they call for standards which do not serve to suppress regional self-determination. The European Union, which has promoted regionalisation in a decisive way, e.g. through structural funds (Boyle 2000), has also strengthened the possibilities of regional resistance. Member states do not play the role of mediators. There is both conflict and consensus directly between the EU and regions, which, compared to member states, are homogenous enough internally (at least this is the argument) to persuasively represent and defend the interests of their citizens in relation to the EU.

Another theme is the weaving together of the motives of regional and local economies, cultures, environments and regional ways of life: a genuine identity. "The diversity of regions shapes the identity of Europe." Many regions are now reinventing their (European) identity, and GM agriculture is an exceptionally convenient issue for articulating that identity. The issue works in polarities of tradition vs. homelessness, quality vs. quantity, heterogeneity vs. homogenisation, (local) origin vs. (global) patent and, in the context of the current controversy, also positing democratic decision-making vs. the unaccountable decisions of bureaucrats and economic pressures as another polarising issue. Resistance against GMOs arises not only from regional identities, but also contributes to its reinvention and articulation.

The last theme concerns the strategic coalitions between regions, scientific experts and NGOs. Each aspires to convey a specific legitimacy to decision-making and actions: regions provide and guarantee democratic representation; scientists provide expertise; and NGOs ensure public participation. The potential is there to create a strong coalition. But this also poses a challenge for the identity of each side, as well as for the issue of GM agriculture itself. What framing of the controversy may it result in? GMOs as a vehicle for the discourse of purity, in partnership, for example, with anti-immigration policy?[21] Or GMOs as an opportunity to reflect on the reasons and goals of regionalisation? How might this alliance change the identities of the actors involved? Will environmentalist NGOs become more culturally sensitive? Will regions become more open through this alliance, less ethno-regionalist? Will a new expert identity emerge in the form of ‘regional experts’? [22]

There are diverse interests at work motivating regions to act against the introduction of GM crops: economic, political, cultural and environmental. With the introduction of GM crops, regions with a tradition of agricultural production would lose their status of “original” food producers, which has thus far allowed them to sell their products at higher prices. Resistance to GMOs contributes to formulating the issues of regional identity, and becomes an argument in support of enhanced regionalisation. The arguments used by the regions are expressed primarily in political terms: interests, identities, and traditions.

Political geography and responsibility

To conclude, let us summarise the analysed positioning of EC, FoEE and the Network of GMO-free European Regions. In addition to the two dimensions of political geography (the shape of knowledge and power) tackled above, we also consider how the actors frame the issues of responsibility and accountability: who is the responsible actor in the GMO case, and what is he, indeed, responsible for? Political geography and the locating of responsibility are closely related.

The EC has announced that the member states are responsible for the introduction of GM crops on their territory and ensuring coexistence. This responsibility is not political, however, but instead is the technical and legal responsibility for preventing excessive contamination and conflicts of interests. FoEE start, on the other hand, with responsibility of the Commission for its political decision to introduce GM agriculture to Europe.[23] Responsibilities in specific conflict cases are only secondary. European regions offer yet another perspective. In contrast with the common strategy in environmental controversies of avoiding responsibility, regions claim they have a responsibility for GMO introduction with respect to the citizens of the regions. And they tend to enact the responsibility in the negative form of declarations of GM-free zones. The regions are actors striving to strengthen and enhance their identity by being actively involved in the case and claiming their responsibility. And again, this responsibility is primarily political, as it is the political status of the regions that is at stake.

	European Commission	Friends of the Earth Europe	Network of GMO-free European Regions
knowledge	universal mainstream knowledge; expert knowledge as primary source of legitimisation (with an implicit value of technological progress)	production of and demand for alternative knowledge; vigilance in relation to regulatory institutions; mixed sources of legitimisation – expert knowledge and values	region specific expertise (experts from regions); values, identities, histories and specific interests as primary sources of legitimisation
power	centralised, technocratic	decentralised interventions with political concern of the whole of Europe (reference to EU citizens)	regionalised; the power of regions to be strengthened through the case (reference to citizens of a region)
responsibility/ accountability	member states to be responsible for coexistence measures and liability scheme	EC to be responsible for the project of introduction of GM crops into Europe	regions to be responsible for the protection of the environment and (agri)cultural traditions on their territory

Notes

[1] In its report on coexistence, the Committee on Agriculture and Rural Development of the European Parliament appealed to the Commission to clarify the meaning of these expressions. The Commission later defined them on their web pages as "...the case where farmers can show the competent authorities that they have taken appropriate measures to avoid the presence of GM material." (http://europa.eu.int/comm/food/food/biotechnology/exemption/index_en.htm).

[2] Tuscany, Abruzzo, Basilicata, Campania, Puglia, Trentino Alto-Adige, Umbria, Molise, Friuli-Venezia Giulia, Lazio, Veneto, Liguria, Marche, Piemont, Emilia-Romagna (in the process of ratification are: Campania and Sicilia) (cf. http://www.foeeurope.org/GMOs/gmofree/countries/Italy.htm).

[3] The campaign is supported by twelve organisations: Les Amis de la Terre (Friends of the Earth France), Greenpeace, Agir pour l'Environnement, ATTAC, Coordination Nationale de Défense des Semences Fermires, Confederation paysanne, Federation Nationale des producteurs de l'Agriculture Biologique, OGM Dangers, Coordination rurale, CNAFAL Federation Nature et Progres a France Nature Environnement.

[4] Provence Alpes-Cote D'Azur, Midi-Pyrennees, Aquitaine, Picardie, Centre, Pays-de-la-Loire, Poitou-Charentes, Nord-pas-de-Calais, Bourgogne, Limousin, Rhône-Alpes,

Franche-Comté, Basse-Normandie, Bretagne, Ile de France.

[5] Outcome of Agriculture/Fisheries Council of September 29, 2003.

[6] Farmers can set up GM-free zones (The Independent on Sunday, October 12, 2003).

[7] http://www.foeeurope.org/GMOs/gmofree/

[8] The moratorium was officially declared by Denmark, France, Italy, Luxembourg and Greece in 1999, but in practice there had been no new authorisations since 1998.

[9] EU vote to continue ban on GM crops (Guardian June 25, 2005).

[10] The Commission decided to list 17 varieties of the maize in the European Catalogue of Seeds in September 2004.

[11] For an overview of member state voting, see http://www.foeeurope.org/GMOs/pending/votes_results.htm

[12] For a discussion of knowledge production and use in environmental controversies, see e.g. Sarewitz (2004).

[13] The web page of the campaign is http://www.foeeurope.org/GMOs/gmofree/.

[14] http://www.foeeurope.org/GMOs/gmofree/Petition.htm

[15] Cf. e.g. Science as smokescreen. A report on the farm scale evaluations of GM herbicide tolerant crops (Friends of the Earth 2003b); New analysis casts doubt on farm scale evaluations. Press release of FoE UK, March 26 (FoE UK 2003c).

[16] Cf. e.g. GM contamination – government experts disagree. Press release of FoE UK, January 2 (FoE UK 2003d).

[17] This strategy is to some extent certainly related to the fact that official expertise rarely supports (or can be used to support) anti-GMO positions. In cases where the results of trials organised by the government could be used to support an anti-GMO position (as in the case of the farm scale evaluations), Friends of the Earth were ready to treat these findings as indisputable facts (cf. Stöckelová 2004).

[18] Cf. Contribution of the regions and local authorities to the European debate on the coexistence of genetically modified crops with traditional and organic farming (2004).

[19] The Assembly of European Regions defines itself as a political organisation of regions in Europe, and speaks for their interests at the European and international level. It was created in 1985 and has 250 member regions from 26 European countries and 12 interregional organisations (cf. http://www.are-regions-europe.org/GB/A1/A1.html).

[20] Members that joined later: Lazio-I, Ile de France-F, Sardegna-I, Provincia autonoma di Bolzano-I, Bretagne-F, Poitou-Charentes-F, Emilia Romagna-I, Steiermark-A.

[21] This possible link has been signalled in the recent UK election campaign. “Michael Howard’s latest foray into populist electioneering with a seven-point plan to curb illegal Gypsy and Travellers’ encampments last night triggered claims that he is deliberately seeking to turn a real rural problem into a racially charged political controversy. But the Conservatives will deploy the tactics again today. Peter Lilley, the former cabinet minister, will reject claims that the country benefits from sustained immigration, and the shadow environment minister, Tim Yeo, will promise to “prevent any commercial planting of GM crops” unless or until it is safe.” (Guardian 22.3.2005).

[22] The programme of the third conference of the Network of GM-free European Regions announced “experts from the adherent regions” in the section The network and scientific world.

[23] Cf. e.g. Co-existence of GMOs and non-GM agriculture: the European Commission dodges its responsibility. Press release of European environmental bureau/ Friends of the Earth Europe/ Greenpeace, March 3, 2003.

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Politics in Everyday Life: Normativity and Agency

Resuscitating Healthy Citizens – defibrillators, cardio-pulmonary resuscitation, caring and new kinds of normativities[1]

Vicky Singleton

The paper is interested in the implementation of a British Community Public Health Initiative. The initiative trains members of a rural community in Cardio-Pulmonary Resuscitation (CPR) and in the use of an automated defibrillator. The objective of the initiative is to prevent deaths from heart attack and to produce Healthy Citizens. The initiative is an application of the New Public Health Government Policy (1999) which promotes distribution of health care expertise and technologies and collaboration between people, communities and the Government. A crucial component of the New Public Health Policy is the Healthy Citizens Programme, which aims to empower individuals in particular ways. The Healthy Citizen enacted by the policy is knowledgeable, has health skills, is active in the community and participates in her own care. This paper explores the enactment of the Healthy Citizens Programme through analysis of the development of a Community Heart Care Initiative in a large rural community in the North West of England. It draws upon participant observation in two community CPR training sessions, analysis of publicity leaflets and interviews with participants. The paper argues that in the day-to-day practices that constitute the initiative what it is to be a Healthy Citizen is enacted in numerous, diverse and dynamic ways.

Resuscitating Healthy Citizens – defibrillators, cardio-pulmonary resuscitation, caring and new kinds of normativties

Introduction

This paper is interested in the day-to-day working of a New Public Health initiative in the North of England called The Heart of the Shire. The Heart of the Shire aims to train **all** members of a rural community in Cardio-Pulmonary Resuscitation (CPR) in order to prevent deaths from heart attack. As an initial step toward appreciating the work involved in being a 'Healthy Citizen' in The Heart of the Shire, the paper analyses a community CPR training session, publicity leaflets and written and verbal commentaries about the initiative. In so doing the paper exposes some of the ways in which the initiative is defining how we should and should not live and, indeed, how we should die. For example, the paper describes how the community training in CPR privileges medical explanations and interventions over domestic and lay responses to heart attack. Further, the paper describes how citizens who participate in the community in ways precisely defined by The Heart of the Shire are valued above those citizens who do not or cannot participate. Hence the paper identifies some of the normativities and negativities produced through The Heart of the Shire and describes some of the practices that produce them. These 'new' public health practices are complex, sophisticated and embedded within the community and they are also highly invasive and difficult to delineate.

The paper suggests that it may be inevitable that approaches to public health define how we should and should not live and die. Indeed, in contrast to Petersen and Lupton's suggestion, the key problematic is not the production of normativities per se but rather the *kind* of normativities and negativities that are produced. It seems that The Heart of the Shire, especially through the tensions embedded within it, promises the production of varied and co-existing kinds of normativities. However, in practice it produces an 'old' kind, albeit in 'new' ways.

The paper concludes by proposing that new **kinds** of normativities and negativities are only faintly visible in The Heart of the Shire. They co-exist in the tensions that characterise the programme but that are frequently smoothed. Thereby, The Heart of the Shire affords a glimpse of the conditions of possibility of a truly new approach to public health that is characterised by mutual respect and companionship between multiple, partially connected, species of normativities and negativities, between normativities that are centrally defined, rigid simplifications and those that are emergent, precarious, negotiated effects.

Saving Lives: Our Healthier Nation (1999)

The British Government White Paper 'Saving Lives: Our Healthier Nation' was presented to Parliament by the Secretary of State for Health in July 1999. It tells about "a new, modern approach to public health", introduced by the Prime Minister, the Rt. Hn. Tony Blair (Forward, 1999). Memorable quotes from the White Paper include:

> "Striking a new balance – a third way – linking individual and wider action is at the heart of our new approach." (p7)
>
> "Everyone in the country is affected by this programme and we have to do our best to make sure that everyone is committed to it".
>
> "We want to see a new balance in which **people, communities and Government** work together in **partnership** to improve health." (pix, original emphasis)
>
> "we are setting tougher but **attainable targets** in priority areas." (pviii, original emphasis)

These quotes highlight the three key foci of the United Kingdom New Public Health: individuals, partnerships and targets. As Tessa Jowell, the then Minister for Public Health said, the New Public Health is "…a third way of promoting and protecting the public health of the country – a way that recognises the realities of the present rather than the habits of the past" (pvi, 1999). The argument is that the 'old' public health was based upon mass solutions for mass population whereas the 'new' is an appreciation of individuality and is based upon localised solutions for a diverse population. It responds to the diversification of production that is an effect of the global economy and to the increased sophistication of society, culture and public expectations. At the same time, a crucial motivation for the necessity of the third way is the persistence of health inequality, or variations as they are sometimes called, such as different mortality rates related to income and education.[2]

Partnership and community participation

According to Tony Blair, the New Public Health is 'new' because "…it refuses to accept that there is no role for anything other than individual improvement, or that only Government can do something."[3] The third way for public health rejects top down planning and also individual victim blaming. Indeed, it is not about blame at all but rather about "opportunity and responsibility". (Jowell, vii, 1999) The New Public Health is a "three-way partnership" that requires "individuals, communities, local organisations and Government to contribute…" (p3, DoH, 1999). It is about *partnership* and *participation*. For example, when the word 'we' is used by Tessa Jowell, she clarifies that it does not mean 'we, the government' but rather 'we, the country' (pvii, 1999).[4]

David Hunter, Professor in Health Policy and Management, begins his response to the UK National Health Service Plan published by the Department of Health in 2000 subsequent to the White Paper:

> It was Churchill who said that ‘there is no heavier burden than a great potential’ and the NHS plan certainly falls into this category…. The proof of the Plan will be in its delivery. The easy part – the writing of it – has been completed. (75, 2001)

The New Public Health is ambitious and I too am interested in the relationship between plan and delivery.[5] This is the starting point for the current paper and I suggest that this is an empirical question of **HOW** the New Public Health is practised day-to-day. Firstly let us consider relevant parts of ‘the plan’ that lay out how the New Public Health will be delivered.

According to the White Paper, the **Healthy Citizens Programme** is crucial to achieving the potential of the New Public Health. This is about “ensuring people have the knowledge and expertise they need to deal with illness and health problems” (p33, DoH, 1999).[6] The Healthy Citizens Programme is about *empowerment* of individuals in terms of increasing and improving access to information, patients participating in their own care and providing training in health skills. The strand of the Healthy Citizens Programme that is directly relevant to the current paper is the focus on **Health Skills** defined in two ways. Firstly, “Health Skills for First Aid” through which the Government is investing 31 million GBP to “expand existing training for people to learn health skills, including first aid, mainly using existing providers” (p35, ibid.). Secondly, “Health skills: Defibrillators”. The White Paper claims that, “In England only two to three people in every 100 survive a cardiac arrest compared to eight to nine in Scotland and 11 in the United States” (p36, ibid.). Two layers of action are proposed:

1. Money to provide automated defibrillators in public spaces where they are most needed such as railway stations and airports defined as “public areas used by large numbers of people where the incidence of cardiac arrest is likely to be relatively high” (ibid.).

2. Programme of training in the use of defibrillators targeted on those who work in or near pilot sites but also members of the public. The claim is that “This will help to de-medicalise and demystify immediate care and enable more people to be both competent and confident in managing emergencies”(ibid.).

Hence, the White Paper argues that a number of deaths from cardiac arrest (heart attack) in the UK are avoidable and are preventable. It consequently proposes that people trained in Cardio-Pulmonary Resuscitation (CPR, a procedure that provides artificial respiration and heart massage) and in the use of automated defibrillators could save lives following cardiac arrest.[7]

The above brief account of how ‘the Plan’ for the New Public Health will be delivered suggests that emergency care is to be partially re-located and made local to the community through distribution of medical technology to public sites and distribution of medical expertise to members of the public. In this way the New Public Health aims to de-medicalise and demystify immediate care through training in skills such as CPR and the provision of automated defibrillators that will save lives while enabling confident and competent citizens.

Nevertheless, a tension emerges in the White Paper between distribution and decentralisation of expertise, for example in the form described above, and re-centralisation in the form of Government-defined **targets**. That is, while the New Public Health aims to empower individuals, to forge partnerships and encourage community participation, it is also about the Government “setting tougher but **attainable targets** in priority areas” (pviii, DoH, 1999, original emphasis). For example, of direct relevance to the current paper is the following:

> **Target: to reduce the death rate from coronary heart disease and stroke and related diseases in people under 75 years by at least two fifths by 2010 – saving up to 2000,000 lives in total** (p72, DoH, 1999, original emphasis)[8]

Within the New Public Health, the Healthy Citizens proposals are tied to implementation of the National Service Framework for Coronary Heart Disease. This framework sets national standards and defines service models for health promotion, disease prevention, diagnosis, treatment, rehabilitation and care. It aims to reduce variations in health care and to improve service quality. The Healthy Citizens programme is to help in the “fight against coronary heart disease and stroke” (p81, DoH, 1999). Hence, the Healthy Citizen may emerge in practice as an identity in tension – an empowered, informed, skilled member of the community who must work towards meeting goals that have been defined centrally, by the Government.

Is the New Public Health a new approach to defining how we should live?

It seems clear that the New Public Health is about a Healthier Nation as well as about a nation in good health. This is performed as a subtle but important break with the past.[9] Public health has always been concerned with the population rather than the individual per se, but the New Public Health responds to the population as a collection of individuals rather than as a homogeneous mass. Furthermore, the New Public Health acknowledges the heterogeneity of health as well as of ‘the public’. That is, the New Public Health is broader in terms of its definition of health and also in terms of the location, forms of intervention and practitioners of health care. Health is heterogeneous because all aspects of life can contribute to health including what you eat, how physically active you are, whether you smoke or not, what kind of sex you practice, how you cross the road, how much sun your skin is exposed to and how much alcohol you drink.[10] So too, health care takes place in multiple locations including homes, public spaces, hospitals, clinics, community meeting rooms and even public houses. Finally, the people who carry out health care are diverse and include professional health workers, family, friends and neighbours. In these ways the New Public Health seems to acknowledge the limitations of a purely biomedical model of health and to appreciate that self, community and state each play an important role in the achievement of public health. It acknowledges that there are multiple ways to achieve public health including saving lives, achieving targets, promoting development of communities and partnerships and making Healthy Citizens that are active and responsible.[11]

In the above ways, the New Public Health can be seen to be a move in the right direction for health care in that it is an attempt to develop health policy and practice that is sensitive to the complexity of the relationship between the state and the individual and to the multiple meanings and causes of ‘good health’.[12] Indeed the New Public Health is itself a complex construction in which various diverse elements are placed in new relations to one another.[13] That is, distribution of expertise and formation of partnerships is associated with skill development and empowerment of individuals, which is, in turn, associated with locating care in the community. Seemingly the New Public Health has situated itself firmly in a (post) modern world. It appreciates complexity, multiplicity and diversity. It is sceptical of authority and aims to distribute medical information, knowledge, skill and technologies. It is constituted by localised initiatives and reflexive citizens. It considers public health as an on-going project that involves perpetual self-monitoring. The New Public Health is concerned as much with how we live (the means), as with how we die (the ends).[14]

So, with all this attention to complexity, multiplicity, diversity, heterogeneity and the redefinition of the nature of expertise it seems that, at one level, the New Public Health is working without definitive constructions of how the world is and how we should live. That is, the New Public Health, in some ways, works against the construction of normativities, at least in the form of centrally defined, simplified definitions of how we should live. It is in these ways that the New Public Health is full of optimism and may truly be a new approach. It promises health for the whole nation that is not founded on, nor involved in the production of, rigid definitions of the subject nor the object of public health. Indeed, a characteristic of the New Public Health aims and plan is its overt optimism. The Executive Summary of the White Paper states:

> We want to see **healthier people in a healthier country**…. We want to see everyone take the opportunity of better **health – now and for the future**. (pxi, DoH, 1999, original emphasis)

Partially hidden behind the inclusive and generous optimism we can see the construction and definition work that is being done by the Government. The generosity is directed by an authoritative centre. The sensitivity to multiplicity and to process, the emphasis on community participation and individual empowerment, is part of an "action plan" that involves achievement of "bold objectives" and setting "new, tougher and challenging targets" for reducing the death rate in priority areas. (p1 – 2, Department of Health, 1999) We begin to glimpse how the New Public Health may be characterised by tensions. For example, its commitment to centrally defined targets may not fit comfortably with a commitment to the localisation of health care. The New Public Health may be unable to avoid being implicated in defining how we should and should not live, but at the same time, these normativities may be a new kind that is located, multiple and flexible. Hence, this paper is interested in what these 'new' normativities are, and also in what kind they are. Does the New Public Health in practice deliver its promise to afford a new kind of multiple, flexible, located normativities? Or does it construct the same old **kind** of unified, inflexible, simplified definition of how we should live, albeit made in new practices.[15]

Another tension within the New Public Health policy documents is that particular ways to live and to be healthy emerge as at once optional and as obligatory. Health is an opportunity and participation is voluntary but both are precisely pre-defined and closely monitored. Exploring how this tension between option and obligation is lived out in the New Public Health initiatives may provide insight to understanding the ways in which normativities are constructed, what kinds of normativities are being produced and how different kinds co-exist. Petersen and Lupton write of the New Public Health:

> "…attempts to 'emancipate' or 'empower' marginalised groups through such strategies as community participation, based on humanistic, neo-liberal principles, may be regarded as ever more complex ways of defining, regulating and normalising the members of such groups." (p180, 1996)

Petersen and Lupton's book is an attempt at, as well as a plea for other researchers to engage in, a more reflexive way of viewing the New Public Health achieved through disruption of its taken-for-granted beliefs and approaches. The book is an extremely insightful theoretical consideration of the New Public Health that also speaks to practitioners. It hopes to lead them to more reflexive practice. This paper is, in part, a response to Petersen and Lupton's plea in its hope to interrogate the assumptions on which the New Public Health is based. However it does so through attention to practice, which, importantly, leads us to an appreciation of how normalisation is about non-humans as much as humans. It also leads to a consideration that the construction of normativities in public health policy and practice is inevitable and hence the need to explore the (conditions of) possibility of different kinds of normativities.

The next section considers what happens when life is breathed into the New Public Health plan. It considers fieldwork data about a New Public Health initiative in practice. Through attention to practice we will see not only what normativities and negativities are constructed but also *how* the New Public Health constructs normativities and what *kind*s of normativities are produced. The modes of construction emerge as complex, sophisticated, flexible, distributed and heterogeneous, but the constructions are frequently simplifications, denial of difference and oppression of resistance.[16]

Appreciating process

The approach that I develop in this paper has a series of commitments. Firstly, it attempts to work outside a dichotomous approach to medicine that would evaluate the New Public Health as either a monstrous beast or a saviour and works neither in awe nor in hatred (Mol, 1998). The present analysis is an attempt to engage with and to participate in the practices of the New Public Health, acknowledging that it is being made here and now, before my very eyes and through the everyday work of the members of The Heart of the Shire.[17] It is an attempt to work within and with, rather than upon and outside of. It does not strive for an objective distance but rather for a situated participation (Haraway, 1991). Secondly much medical sociology is focused on the human more than the present analysis proposes. Petersen and Lupton's (1996) critique of the New Public Health is excellent and insightful but different in important ways to the approach I develop here. They argue that the assumptions on which the New Public Health is based have not been examined closely enough by medical sociologists and they propose examination through the construction of the subject and the power/knowledge relations. This is extremely important and I agree that actors are always unstable and multiple. (p173, 1996) But I add that they are also, always, impure and heterogeneous. That is, I am keen to appreciate materiality and relationality. To be a Healthy Citizen demands associating with various non-human as well as human entities and this can be difficult and is a source of inequity related to access and competence. Finally, I think that another difference is much subtler, and I tentatively propose that the present analysis is less concerned with goals than with process. It is less about evaluation of the New Public Health and more about the on-going work of making the New Public Health. It is concerned with the performance of the New Public Health rather than the product.[18]

All of the above leads me to an analysis of the New Public Health in practice. The following questions guide my interference. They are questions concerned with 'how' rather than 'why'. How is the New Public Health partnership made and maintained? How does it work? How does a person become a Healthy Citizen? What materials, emotions and activities are involved? Science and Technology Studies, as well as many other disciplines such as Health Policy and Organisational Studies, have frequently told us that practice may be very different to the plan (for example see Timmermans 1998;

Singleton, 1996, Singleton and Law, 2003). My case study is interested in the ingredients that are mixed together, here and now, before my very eyes in my own community, in the making of the New Public Health and the Healthy Citizen (Latour, 1987).

Heart of the Shire (1999)[19]

Mrs. Illsby[20] lives in a rural community. She lives in a large village on the coast in North West England. The nearest hospital is 20 miles away. One terrible day her husband collapsed at their home. She telephoned for an ambulance. Her husband died before the ambulance arrived. According to Mrs. Illsby, her husband died because the ambulance took too long to arrive at her home. Motivated by this experience, the story tells that Mrs. Illsby searched for alternatives to the long wait for an ambulance often experienced by members of rural communities. She discovered a programme of public Cardio-Pulmonary Resuscitation that thrived in Seattle, US. Having visited Seattle to see for herself, she contacted the local Ambulance Service and it was through the collaboration and commitment of herself and the Chief Executive of the Shire Ambulance Service that The Heart of the Shire Appeal was started to fund the programme of community training in CPR. The additional First Responder Scheme was an "effective spin off" from the public CPR training (Heart of the Shire leaflet, 2000). The First Responder Scheme is a group of community members who volunteer to be on call to respond to a cardiac arrest in the community. They carry automated defibrillators with them.

According to a leaflet produced by The Heart of the Shire, the aims of the initiative are to:

- Train all members of the community in cardio-pulmonary resuscitation
- Provide defibrillators and train first responder volunteers in their use
- Provide fully equipped fast response units.

The leaflet goes on to explain that:

> The Heart of the Shire appeal has been set up• to create a "chain of survival", which will provide training and equipment to ensure the … critical links in the emergency treatment of sudden cardiac arrest are available to people in our community. Providing these procedures quickly may determine whether someone lives or dies. (Heart of Shire, leaflet, 2001)

The leaflet, titled "Take Heart", is widely available. I picked up my copy at a local agricultural show and I saw copies at the community doctor's surgery, in the community library, in local shops and in the local dentist's waiting room.

The crucial elements that constitute The Heart of the Shire are publicity and information leaflets, regular updates on the initiative published in a community magazine, community CPR training sessions and fund raising events and activities. The following account of The Heart of the Shire draws upon interviews with an array of participants in the initiative including trainers, responders, trainees, untrained members of the community, upon leaflets and published updates in a community magazine, and upon fieldwork notes made attending two CPR training sessions and various local fund raising events.

The Heart of the Shire as partnership

The Heart of the Shire is an example of the New Public Health in action. It is an approach to public health through which individuals, the community and the Government are working together to save lives and to promote a healthy nation. It is also, or so the story goes, a grass roots initiative that is rooted within the local community. It is the brainchild of one local, energetic, dedicated woman who campaigned for this to be a community initiative. The appeal began in July 1999 and the first training session in October 1999 – the same time as the White Paper was published. Certainly the timing of the White Paper and the development of The Heart of the Shire seem to be related. One might say that The Heart of the Shire programme could have more than one origin story. But we know that any history is partial.[21] The important point here is that The Heart of the Shire is an effect of the joining together of the especially responsible local citizen, Mrs. Illsby, and her community, with the county ambulance service. This would seem to fit the proposals of the New Public Health as discussed in the previous section of this paper, characterised by community and professional partnerships and grass roots initiatives.

Moreover, this story about the origin of The Heart of the Shire seems to play a significant role in the development and durability of the initiative. This history is retold in many places such as the public CPR training sessions, at fund raising events, in the community magazine and in homes when fund-raisers seek donations. The story seems to encourage support and participation by members of the community as it defines the initiative as owned by the community rather than the health service. So, we might say, according to local lore of the Over River community, the initiative is a partnership between The Heart of the Shire Appeal and the Shire Ambulance Service and the partnership originated in the community.[22] Indeed, Mrs. Illsby is now something of a local hero. And looking through the lens of the New Public Health, she epitomises the opportunistic and responsible citizen that it searches for. She took the baton of responsibility for her own health and that of her community from the government and local and national health service managers, ran with it and passed it over to a New Public Health partnership that co-ordinates individual, community and government participation.

Healthy Citizens are active and participate

The leaflet mentioned above titled ‘Take Heart’ is trying to enrol volunteers or donations of money. In the process it bears close scrutiny in its construction of a Healthy Citizen. It seems that ones’ donation, done quickly, can save lives. Conversely, the unwritten message of the leaflet is that not contributing, whether through volunteering for training or making a donation, could be contributing to a person’s death – and that person is another member of one’s own community, a neighbour in the broadest sense of this term.

My own involvement in the programme was initiated through a visit from a neighbour, carrying a money collection box, requesting money and active participation. The discussion that ensued was full of accusations of blame about other inhabitants of the local community that failed to show an interest in the programme despite the fact that “they would expect us to help them if something happened to them”. The non-participants were referred to as ‘couch potatoes’, ‘stupid and ignorant’ about the causes and risks of heart disease and as ‘short-sighted’, unable to think long-term about their own future needs (Fieldnote diary, March 2000).

It seems that The Heart of the Shire is about resuscitating citizens in more ways than one. It is about training people to carry out CPR and at the same time about training people to be a ‘good’ citizen. Being a Healthy Citizen emerges as a variety of things including: not dying from cardiac arrest because a member of your local community can resuscitate you, being trained to resuscitate another, giving money to train others and demonstrating one’s support for The Heart of the Shire. That is, being a healthy citizen is not just about physical health; it is also about practical skill and community participation. Through and through the Healthy Citizen is the *active* citizen – donating time and/or money to the initiative.

The Responsible Community

Petersen and Lupton wrote in 1996:

> The New Public Health is at its core a moral enterprise that involves prescriptions about how we should live our lives and conduct our bodies, both individually and collectively. (p174, 1996)

The Heart of the Shire is prescriptive about how to live individually and collectively in that it prescribes, in precise ways, participation of both the individual and the community. For example, to participate in The Heart of the Shire is to play one’s part in the war effort within the community of Over River. This is a war on community ill health, the key attacker being the heart. As a part of constructing the healthy, dutiful citizen that constitutes The Heart of the Shire, cardiac arrest is constructed as unpredictable and promiscuous – “it’s all but impossible to predict who will have a sudden heart attack, or where or when it will happen”. A heart attack is a predator on which we need to wage war and “First Responders often think of themselves as ‘Front Line Soldiers’” (Community Magazine, May 2002).

The Heart of the Shire constructs a community that is at risk of death. Quite suddenly, on reading the leaflets and meeting the community ambassadors of the initiative (fund raisers, trainers, responders) one feels as if one’s community is in danger and that all members of the community should be involved in saving lives. Participation in the initiative is about becoming a part of something important. The leaflet ‘Take Heart’ previously referred to encourages the reader to “Become part of the biggest emergency heart care response programme in the country!” (Leaflet, 2001). Moreover, to participate in the Heart of the Shire is to participate in a community that is pulling together to make itself safe and healthy. Many leaflets refer to “our community” and often state that the programme aims to “train EVERYONE within the community”(2001). That The Heart of the Shire offers an opportunity for people living in the Over River area to become part of a community, and to achieve a sense of belonging, is demonstrated even more strongly in the public calls for participation in training that are detailed below.

The following ‘call to arms’ was collected from a community doctor’s surgery. It is an A5 sheet of white paper, photocopied, not glossy in any way, simply black writing on white paper using standard font, the use of bold and capitals is in the original.

> IN 12 MONTHS THE [HEART OF THE SHIRE] HAS **TRAINED OVER 400 RESIDENTS IN CPR, 20 FIRST RESPONDERS ACTIVE IN OUR COMMUNITY PROVIDING 2 FULLY EQUIPPED FIRST RESPONDER TEAMS (95 calls attended since Dec’99) 8 FULLY QUALIFIED TRAINERS**
>
> We aim to train EVERYONE in the Over River area to recognise the signs and symptoms of a Heart Attack and how to perform CPR (cardio-pulmonary resuscitation)
>
> Please continue to support this vital scheme in your village (Leaflet, 2002, original emphasis)

This information is ‘officially’ headed by two logos, each given equal size and positioning, The Heart of the Shire logo and the Shire Ambulance Service logo, again reminding us of that this initiative is a partnership between medical professionals and the community. Nevertheless, the ‘home made’, cheaply produced look of the leaflet serves to situate the partnership firmly within the community, as a community responsibility. Moreover, often these collective invitations to inclusion in The Heart of the Shire include an additional invitation to attend a forthcoming fund raising event. In the above example there is an invitation to “a garden party offering fun for all the family” at a home in the Over River area.

We are reminded that being a Healthy Citizen in the New Public Health is an overtly social activity about collective responsibility.[23] It is firmly a grass roots initiative located in gardens of local homes, agricultural shows, libraries, village halls and church meeting places. Moreover, life saving techniques are thoroughly and completely entwined with social and moral responsibilities, they are firmly and completely situated within the community. Again we are reminded that The Heart of the Shire, although stating that it is primarily about saving lives in the form of medical techniques such as CPR and defibrillation is, at the same time, about many other things that are not physical nor medical. In particular it is about participation, activity and responsibility, as an individual and as a community.

Training and skill development and avoidable mortality

The aforementioned 'call to arms' is one example of many similar leaflets that I have collected or had sent to me over the course of the initiative. The leaflet offers "**FREE CPR TRAINING TO ALL!**" This line is underwritten with "LEARN HOW TO RECOGNISE THE SIGNS AND SYMPTOMS OF A HEART ATTACK AND HOW TO PERFORM BASIC LIFE SAVING SKILLS" (2002).

The Heart of the Shire is about life and death and it is exciting, engaging, frightening and empowering. It is about members of the public as heroes, about people collapsing, about emergency care, about responders rushing to the scene in their neighbour's hour of need. Consider the following excerpt from the monthly update about The Heart of the Shire published in the free community magazine that is posted through each household door and is available in all shops and many public places.

> There is no greater feeling of helplessness than when you are faced with a fellow human being who is choking or having a heart attack, and you don't know what to do to help them.
>
> I have been in this position several times in my life and it is the main reason why I became a First Responder. I needed these skills.
>
> The training we give is second to none. We are glad to pass our skills on to you at our Public Training Sessions.

Please come along [to a CPR training session] and learn a skill which may help you save a life (March 2002).

The Heart of the Shire, specifically training in CPR, is the means to preventing death from heart attack. Being trained in CPR emerges as a way of avoiding mortality.

Following the invitation to attend for free the CPR training described above, the reader is invited to attend a village venue, typically a local community centre, a church hall, a village meeting place or even a public house. I have attended two of the training sessions and I detail some aspects of my experiences of this below.[24]

> A friend accompanies me. We park our car next to a car with magnetic signs on the bonnet and in the back window saying ‘First Responder on Call’ and ‘Emergency’.[25] This is a normal, everyday, maroon-coloured saloon car. The signs distinguish it from other vehicles. We must be in the right place. It is not obvious in any other way for we are at a United Reformed Church. A brick building with arched windows and a pitched roof porch topped by a small white cross. This is a simple, small, building, easy to pass by without a second glance. We enter the church. But there is no alter, nor pews, just plastic chairs arranged to face a large white screen placed in front of a stage with drawn curtains. Next to the screen is a table covered by a blue cloth and topped with a computer and an automated defibrillator. There is also a piano, a couple of religious pictures hung on the walls and people. There are three men in blue boiler suits with reflective strips on their ankles and edges of their sleeves and a crest embroidered on the left breast pocket of the suits topped with their name. There is a woman in a sweat shirt of the same colour blue with a large heart on the front and thirty or so other people, some sitting and some standing, that are not in any kind of uniform but in everyday informal clothes. The woman in the blue sweatshirt is kneeling on the floor assembling two halves of a human ‘dummy’. (Fieldnote, training session, August 2001)

Training to be skilled in CPR is made accessible and widely available. It is physically and socially located in the community. It often takes place in the evenings when many people are not at work and/or can get child care and travel assistance. It is also accessible in its very familiarity and mundane-ity. It is constituted in large part by an array of ‘every day’ and known things. For example, it takes place in non-medical, local places such as church halls and community meeting places and it includes a piano, neighbours, cups of tea, biscuits and the chairs that you might sit on when you attend church on Sunday morning.

Nevertheless, a member of the Over River community who attends training in order to become a skilled Healthy Citizen also encounters many unfamiliar and extra-ordinary elements. Indeed, the citizen skilled in CPR is an effect of the mixing together of a diverse array of elements including tea, biscuits and familiar chairs, but also human dummies, a computer, an automated defibrillator and boiler suits with reflective strips. This is what acute medical care is made of in the community in the 21st century. The skilled citizen is an effect of associations between an array of human and non-human entities, and the non-human entities are as crucial to the making of the skilled citizen as the human. Becoming a citizen skilled in CPR is not a ‘pure’ enterprise, it is material through and through, mediated by various materials and persons. It involves negotiating and associating with an array of entities. Moreover, making and maintaining relations with an array of heterogeneous entities involves work – this is the work of embodying the Healthy Citizen. Below I detail some of the necessary work of embodiment that is frequently unacknowledged, certainly in 'the Plan' for the delivery of the New Public Health and also in many medical sociology approaches where the focus is primarily upon human actors at the expense of the non-human.

The effect of this differing focus, as slight as it may be in relation to, for example, medical sociology approaches informed by the work of Foucault and concerned with the co-evolution of knowledge and power, has important implications. For instance, methodologically it is crucial to examine practices in order to make visible the complex work of the relationality and materiality and, moreover, to expose the specificity of the work. Because being a Healthy Citizen is an effect of mixing together an array of heterogeneous elements, the work involved in being a Healthy Citizen in The Heart of the Shire may be different to that of being a Healthy Citizen in another initiative or indeed to being a Healthy Citizen within The Heart of the Shire at different times and in different places.[26] Political implications can be conceptualised as issues of access and competencies. There may be inequity in who has access to, and the competence to negotiate with, various technologies and materials that are necessary to the embodiment of a Healthy Citizen in The Heart of the Shire. For example, during one of the training sessions I observed an elderly woman who could not practice CPR on the dummy because she could not bend down. Other members of the community have mentioned various issues that affect their ability to perform the role of Healthy Citizen including availability of transport to travel to training sessions or to respond to emergency calls and availability of money to donate.[27]

So the skilled 'Healthy' citizen in The Heart of the Shire is an effect of a complex set of associations between an array of heterogeneous entities. So too, The Heart of the Shire itself is another set of newly formed and shifting relations between an array of re-defined entities. For example, the Shire Ambulance Service has become linked in a 'professional' capacity to trained members of the community carrying automated defibrillators – a technology that was previously used only by professional medical staff. Further, it is linked to lay members of the community trained to carry out CPR, to community members trained in training others to carry out CPR, and also to cars, to magnetic signs, to dummies, to village halls and to churches. The partnership that is The Heart of the Shire is not only between people but also between various materials.

Distribution and deference: re-medicalisation, re-mystification and re-enchantment with medical science

> Jane calls us to order. She introduces herself as a First Aid Trainer. She introduces other colleagues such as Bob, a First Responder and first aid trainer, and also mentions various volunteers who are in the kitchen preparing the tea and biscuits that we will be offered later. Now Jane begins the presentation proper. "The whole idea is to work with the Shire Ambulance Service to provide community training in Life Support…. All the volunteers are trained by the Shire Ambulance Service using guidelines developed by the Shire Ambulance Service." Bob backs this up with, "The paramedics are good, but they have to get here. This is a rural area and we might wait 20 to 30 minutes for an ambulance. We need to act in the first 5 to 10 minutes." Later Jane tells us "We are not medical people so we can't answer medical questions". (Fieldnote, training session, August 2001)

It seems that Jane is engaged in telling the trainees about the distribution of power, or responsibility. Although Jane does not wish to threaten the identity of the initiative as firmly rooted within the community, she is keen to stress the limitations of the volunteers and she continually defers to the Shire Ambulance Service. This deference was obvious throughout the training and offers insight into the tensions that are inherent to the practice of this newly formed public health partnership. In some ways it seems that The Heart of the Shire in action, while obviously about distribution of knowledge, is not necessarily about distribution of expertise. Indeed in some ways the practices of The Heart of the Shire validate expertise as residing with medical practitioners – the ambulance service and the hospital. It seems that the truly difficult work of medicine is always going on elsewhere. As the Community First Responder Manager based at the Shire Ambulance Service NHS Trust writes, "Community First Responders…. carry out life-saving treatment ***until the emergency ambulance arrives***" (community magazine, 2002, my emphasis). And, a First Responder writing in the local community magazine states, "**IN AN EMERGENCY ALWAYS CALL 999"** (community magazine, 2002, writers emphasis).

There are repeated references to hospital care, to first and foremost calling for an ambulance, with the addition of, "The First Responders are called out utilising a protocol by the 999 Emergency Control Desk" (ibid). Various members claim that The Heart of the Shire does important work to "support" the work of the ambulance service and the hospital. This suggests that, in direct contrast to the aims of the New Public Health as defined in the White Paper and as quoted earlier, through the practice of The Heart of the Shire immediate care is, in some ways, re-medicalised and re-mystified. This leads me to suggest that one effect of the initiative is a form of re-enchantment with medical practitioners and medical science. The initiative is firmly rooted in a biomedical approach to health that prioritises intervention and use of medical technologies and its practices serve to validate this approach. Petersen and

Lupton's critical analysis of the New Public Health concludes:

> We have emphasised the continuing belief in the power of science, in social progress through science, and in the rational control of problems as they are evident in the discourse and strategies of the new public health…" (p177, 1996)

Considering the lived body of the New Public Health through attention to The Heart of the Shire in action supports Petersen and Lupton's conclusion. The Heart of the Shire is founded on a belief in medical science. Medical explanations of, and responses to, heart attack and death are privileged above possible alternatives and further, as previous sections of this paper have suggested, are normalised. Indeed, this paper responds to their consequent call for a questioning of science through "a consideration of *how* science presently operates within existing systems of power to 'normalise' certain patterns of action and systems of thought, such that they appear self evident, given and therefore beyond dispute." (ibid., my emphasis)

Embodied normativities and negativities: The making of lack and competence

Through the training practices, the leaflets and the commentaries of its members, The Heart of the Shire demands and defines a particular type of participation. Participation is necessary at the level of the individual and the community and is a partnership with medical professionals. Participation is active engagement and involves giving money and time and being trained in CPR. In addition, the practices of The Heart of the Shire make death by cardiac arrest in the Over River community avoidable and 'medical' intervention through CPR and defibrillation is made preferable to any other response.

Furthermore, all the practices that constitute the everyday work that is The Heart of the Shire involve new relations between a diverse array of humans and non-humans. Responsibility for the health of the Over River community is disseminated across these new relations and the array of entities that they associate. The Heart of the Shire is the effect of a particular distribution of skills, information, practices, materials and technologies. This particular distribution, to some extent, transfers knowledge, materials and practices from medical practitioners and clinical locations to lay practitioners and public locations. In this way, the New Public Health could be seen to meets its promise to demystify and de-medicalise immediate care. However, as the previous section of this paper suggested, the practices that constitute The Heart of the Shire serve to medicalise and to mystify immediate care and in the process to privilege and enchant medical science. Hence, this is another tension in The Heart of the Shire. A tension between distributed expertise and centralised expertise. In practice this tension is often resolved as 'old' kinds of normativities are constructed. Normativities such as that medicine does the truly important, difficult and necessary work, whereas trained lay people are mere assistants following the orders of medicine. There is little or no room for alternative versions of how we should live and die within The Heart of the Shire. For example, there is no discussion about the work carried out by trained citizens if that work is not seen to assist medical intervention. Responders told me, dismissively, as if ashamed, that "Much of what we do is TLC and support." (Ted, First Responder, 2001) and a local evaluation of the initiative stated that, "First Responders have also been known to look after the family pet" (First Responder Manager, community magazine, 2002), but followed this with an exclamation mark to highlight the humour and unimportant status of such an intervention. Normativities emerge within the initiative and moreover their character is that they are exclusive of alternative normativities.

Importantly, the practices of The Heart of the Shire that construct normativities also, and at the same time, construct negativities – norms for how we should not live. At a CPR training session which included repeated calls for volunteers to become First Responders – a step further than carrying out CPR in terms of active participation as it involves being responsible for an automated defibrillator and responding to emergency calls – I noted the following exchange between a First Responder and a member of the audience:

> Audience: I'm committed to the idea of the programme but it is difficult for me to commit to becoming a First Responder, I'm on my own with three children and a job and I don't think it would be right. I wouldn't have the time or energy.
>
> FR: Well, Kate is one of our star First Responders (points admiringly to a young girl in a nurses uniform that is seated in the audience). She is such a good person. She has an ill mother to care for, as well as an elderly mother-in-law that she drops in on every day, and she works at the local nursing home and she still gets to most of the calls even if she is not on call.
>
> Audience: But as a single parent I know that I could not just leave the house if I was on call.
>
> FR: Well there are other ways of involving yourself, you could do administrative work for the programme, or make cups of tea at these training events. Just write down on the form what you could offer. (Fieldnote diary, training session, August 2001).

Active participants are the Healthy Citizens of the New Public Health. Moreover, the more one participates, the greater morality and 'goodness' one has. First Responders are frequently referred to as "dedicated people" and as altruistic, caring people "giving up time to train and to be available night and day to respond to neighbours in their hour of need" (First Responder Manager, community magazine, p16, 2002). They are defined as "**active** in our community" (Leaflet, 2001, my emphasis).

I do not aim here to fail to appreciate the time, energy and skills that First Responders offer. Rather, I want to open a space to query the logic through which, in order to acknowledge their activities, non-participation is categorised negatively and is not a reasonable option. It can only be the result of ignorance, laziness, or perhaps fear or lack of humanity. It can only lead to regret and inadequacy. Further, I propose that a logic of science forces this explanation.

The following, an extract from an article published in the free community magazine, makes disturbing reading:

> Earlier this month a lady stopped me and said 'You're the First Responder who came to my husband'. She told me how he, an extremely active man of 80, collapsed and died at home.
>
> Although I had arrived quickly I was still too late, and she asked if there was anything she could have done to help him until I had arrived with my defibrillator.
>
> I could only reply that sometimes the kiss of life and heart massage (CPR) can act as a heart/lung machine and keep the circulation going until a defibrillator can be used to restart the disfunctioning heart.
>
> She then told me that he'd had a slight heart attack a few months earlier but she'd never got around to attending one of our CPR Public Training Sessions and hadn't known what to do.
>
> This brought home to me how important it is that we all know what to do when someone has a heart attack." (Community magazine, p19, April 2002)

Many First Responders as well as medical professionals acknowledge that CPR saves a life in very few cases.[28] Considering this particular case, a man of 80 with a previous history of a heart attack, one wonders how useful CPR administered by his wife could have been. It seems that the key effect of this article is to promote guilt and to suggest how inadequate it is not to be trained to perform CPR. The horror of this story lies in the possibility of this elderly woman being left with the feeling that she may have been able to save her husband from death if only she had found the time to be trained in CPR. This, rather than her being able to grieve the death of her husband and to celebrate his active and long life. It emerges that, within The Heart of the Shire, to resist being a Healthy Citizen through failure to attend the training in CPR is to be deviant or lacking in some way. Involvement in this precisely defined way is a matter of personal and community responsibility and a measure of commitment to one's community, to one's neighbour and to one's family.

In its practice, The Heart of the Shire, as Petersen and Lupton (1996) suggest of the New Public Health, is prescriptive about how we should live our lives and conduct our bodies, both individually and collectively. Here we have seen some of the ways in which it is morally, socially, physically and materially prescriptive. Those in The Heart of the Shire community *should* not die of a heart attack, *should* be trained in CPR, *should* participate and *should* become familiar with an array of materials and technologies such as human dummies, automated defibrillators, leaflets, collection boxes, money, boiler suits and car signs. The initiative provides training and offers opportunities and responsibilities but it also, at the same time, dis-empowers.[29] That is, like the Norwegian disability policies described by Ingunn Moser (2003), it makes as much, if not more, ‘lack’ and inadequacy as it does skill and competence. Through The Heart of the Shire some (few) people become normal, competent, confident, skilled Healthy Citizens and some people become abnormal, incompetent, inadequate, deviants lacking in the skills necessary to be a Healthy Citizen. The Heart of the Shire makes both Healthy Citizens and Unhealthy Citizens simultaneously – it makes both normativity and negativity, and they are of a conventional, rigid and non-negotiable kind. Furthermore, some members of the community are ‘doomed to fail’ in that they can never embody the normativity of Healthy Citizen for various reasons which include accessibility to technologies and materials.[30]

Evolving normativities and significant otherness

The above account has put flesh on the bones of the 1999 UK New Public Health plan through an analysis of The Heart of the Shire in action. This paper has outlined some of the normativities produced through the plan and through the practices that constitute The Heart of the Shire. The New Public Health plan defined a series of normativities, including empowerment of individuals to become Healthy Citizens who are participating and skilled and are active members of their community that is, in turn, working in partnership with government and local professionals. These normativities emerged as in tension, for example, they sit uncomfortably with commitment to centrally defined targets, claims to the authority of medical knowledge and to the necessity of medical intervention. In many ways it seemed that the New Public Health, at least in its plan, was ambitious and promised not only new normativities but also new kinds of normativities that are flexible, emergent, located and exist in tension with more conventional centrally defined versions of how we should and should not live and die. This paper was keen to explore what happened to the promise of the potentially productive tensions in practice.

The Heart of the Shire, as an example of the New Public Health in action, demonstrates the production of conventional kinds of normativities and negativities. Moreover it demonstrates their production through new practices. Importantly, these new modes of production are highly invasive, mundane, accessible, difficult to delineate and embedded within the community. They are ubiquitous, seeping into the fabric of the community and changing what it means to live and to die in this community. The issue to address becomes not only one of what norms are produced but rather what kinds and how. This analysis has suggested that The Heart of the Shire in practice produces old kinds of normativities and negativities, albeit in new ways. This is the worst combination of unified, static, rigid norms about how we should live and should not live and die individually and collectively, made in apparently friendly, located, mundane, familiar practices.

However, there remain grounds for optimism within the New Public Health because this paper also suggests that different kinds of normativities are faintly visible within the plan and the practices of the New Public Health. We glimpse different kinds of normativities co-emerging in the tensions that characterise the plan and also the practice. Sadly the promise of this productive tension is lost as it is reconciled in practice. The normativities that are produced are the conventional kind that exclude the validity of alternative normativities. Within this conclusion I ask if it is possible to live normativities that are modest, emergent and precarious, normativities that are inclusive rather than exclusive?

The New Public Health plan and the practices of The Heart of the Shire afford a glimpse of the conditions of possibility of the co-existence and co-emergence of different kinds of normativities and negativities. The insight is that tensions may be conducive to such co-existence. Helen Verran's wonderful account of how different knowledge practices can live along side one another in Nigerian classrooms writes of "emergent ontologies" that are made possible through living in vulnerable places of dissonance and tension (Verran, 1999). Such "on-the-ground work" is responsive to the histories and locations of the disparate groups and aware of the necessity to build joint futures (Haraway, 2003, 7). In The Heart of the Shire this is an argument for mutual respect of specificity, individual needs and located materiality (the 80-year-old man may need to be allowed to die rather than be resuscitated, his wife may need to accept this and to care for him rather than attempt to resuscitate him) ***and*** of universality, general advice, community needs and de-contextualised guidelines. The Heart of the Shire should be about living with and constructing multiple ways of being, doing and knowing heart attack, healthy citizenship and community living that do not necessarily fit comfortably together. This would be in contrast to what we have seen within The Heart of the Shire. There is lack of companionship between two, partially connected, species of normativities – those that are centrally defined, rigid simplifications and those that are emergent, precarious, negotiated effects. The former excludes the latter as the tension between them is denied.

I take the term companionship from the recent work of Donna Haraway (2003). Her problematic is how dogs and people might live together with a mutual respect that means acknowledgement of both the wonders and the dangers of one another. It is about living in the differences and appreciating that moments of communication and connection are often hard earned, are a privilege and, in this way, are precious.[31] In The Heart of the Shire there are moments of connection between normativities in tension. Such moments allow a glimpse of a truly new ordring of public health policy and practices in which the 'other' specis of normativities are significantand thereby valued and challenged.

Notes

[1] To preserve their anonymity I disguise the names of the community, the initiative, and the people involved in the initiative and I also rename sources produced by The Heart of the Shire. The actual name of the leaflets and the community magazine cited within this paper cannot be included - it would identify the community in question. All the leaflets are produced by The Heart of the Shire and are distinguished in the text by their year of publication. The community magazine is a public document distributed free of charge to all homes in the community and editions are distinguished in the text by their date of publication.

[2] Thereby the New Public Health may sometimes experience priorities in tension – one of a series of tensions that, I will argue, characterise the New Public Health in policy and in practice. For example, the empowerment of individuals and communities may not quite fit with the achievement of Government defined and set targets in reduction of death rates in priority areas. "Things that don't quite fit" was the title of a workshop at Lancaster University (April, 2002) organised by John Law and Vicky Singleton. The papers presented considered an array of empirical foci including medical protocols on Alcoholic Liver Disease, innovative teaching methods, guidelines for the management of the legal system and a system for administration of drugs in hospital. All of the papers were concerned with the productive tensions that can arise from the ways in which systems inevitably do not quite fit the locations in which they are practised.

[3] This could also be framed as a question about the relationship between the individual and the institution or between the private and the public. And put another way, the White Paper is about the relationship between society and medical science, between expert and lay knowledge. More of this later when I will be drawing upon work from Science and Technology Studies to think about the role of science in the New Public Health.

[4] In this way the New Public Health is engaged in distribution of that which was centre. The policy performs healthy nation as an effect of 'working together'. The healthy nation that is proposed is an effect of the centre, the government, adopting a role as one element among other influences. So, while drawing upon 'old' distinctions between the local and the central, the third way is also engaged in distribution activities, in quering the local/central distinction, eroding it in a *new ordering* of the world – the New Public Health. This world is inhabited by entities in partnership, working together, with local entities becoming crucial nodes in the healthy nation and central nodes becoming just one part of the new ordering – new associations, roles and materials - that is the New Public Health.

[5] I will, for the moment, suspend discussion of the false dichotomy between plan and action that many science studies scholars have so meticulously exposed. For example see Suchman (Plans and Sit Action).

[6] This programme has three principal stands: NHS Direct – a nurse-led helpline and internet service offering information and advice on health; Expert Patients Programme - to help people manage their own chronic illnesses, people take the lead; Health skills – to help themselves and other people undergo training to learn health skills including first aid. It is the latter with which I am concerned in this paper.

[7] While this paper will not be focusing on the use of the automated defibrillator, this technology is a crucial actor in The Heart of the Shire initiative. Indeed, it will become clear to the reader that the availability of automated defibrillators is a major influence on the development of the initiative.

[8] Coronary Heart Disease and stroke is one of the four priority areas targeted by the New Public Health. Coronary Heart Disease, along with other diseases of the circulatory system, is said to account for 200,000 of the half a million deaths that occur in the UK each year. It is also argued that although death rates from Coronary Heart Disease have fallen since the 1970s England still has one of the worst rates in the European Union. In addition the White Paper cites evidence of a widening gap between the best off and the worst off in the United Kingdom.

[9] As quoted on page 1, Tessa Jowell (1999) claims that the New Public Health recognises the realities of the present rather than the habits of the past.

[10] See 'Ten Tips for Better Health' that is advice offered by the Chief Medical Officer, Liam Donaldson, in the White Paper (pxiv, 1999).

[11] One could dispute just how 'new' the New Public Health is. Indeed the use of 'New' is possibly a rhetorical devise. It is not at all clear that there is a break with the past. Public Health has always acknowledged the heterogeneity of health as it has, for example, always been concerned with environmental factors as much as with physical. However, it does seem that the New Public Health has encompassed increased heterogeneity as it encompasses almost every aspect of life. There is a wealth of literature concerned with the history of public health. Here I am offering a brief overview of current policy as represented by the Government.

[12] Indeed, the New Public Health could be a useful vehicle to consider some of the concerns of contemporary social theory about the relationship between the centre and the periphery, the situatedness of expertise and the multiplicity of the subject. More of this later.

[13] This way of thinking I develop from the actor-network approach (ANT) in Science and Technology Studies. In its early stages the approach was associated with a particular group of writers including John Law (1986, 1994), Michel Callon (1996) and Bruno Latour (1987). For ANT things are always the effect of a network of relations between an array of heterogeneous entities.

[14] In Giddens (1991) terms, it seems that the New Public Health is a product of the the Late Modern Age as it sets out goals for itself and its citizens to achieve through a process of self-monitoring. The self is an enterprise, as is public health. One of the critiques of the New Public Health developed by Petersen and Lutpon (1996) is that such a focus on self-care can lead to a narcissistic preoccupation with the self that may be in tension with the empathy of duty and community participation.

[15] Indeed, this paper suggests that this is the case in practice, and further that traditional kinds of normativities are constructed in new, more subtle, more sophisticated practices that are difficult to delineate and to identify.

[16] I will discuss this later but I am not sure that we nor all the practitioners of the New Public Health need to be more reflexive, certainly not all the time. Indeed, perhaps sometimes we need to be less reflexive. In another arena, Mary Ann Elston (1997) in her consideration of the relationships between Science and Technology Studies and Medical Sociology calls for

a reflexive approach from both sides. The former need to be more attentive to the structural aspects of medical care and the latter to medical technologies and skills in practice, and both aware of the assumptions which they bring to their analyses. Again, I might question the value of increased reflexivity and would call upon Haraway (1997, 2003) to help me think productively about this.

[17] I want to add that I care about The Heart of the Shire and experience a deep ambivalence about it. As Donna Harraway said of her motivation for choosing research foci: it is, "something I can't say yes or no to but I want to do something about it". (Public Lecture at Lancaster University 12th March 2003).

[18] Although I will not be developing the notion of 'performance' explicitly in this paper, it is implicit in the analysis. Law and Singleton (2001) offer an account of the turn to performance in Science and Technology Studies.

[19] The red rose is often used on the publicity material. It has been a long-standing symbol of the county of 'the Shire' as well as a symbol of love and caring. The red rose is also a symbol appropriated by non-communist social democratic political parties such as the Labour party in the United Kingdom.

[20] I have changed all names to secure anonymity. This story is colated from fieldwork notes.

[21] As Donna Haraway has shown, the important role to be played by those who are telling these stories is to ensure one's own story interferes with versions of the way reality is performed that we wish to be disrupted and leaves intact, indeed, re-makes and builds versions of reality that we choose to support.

[22] Although this is strictly the case, the distinction between The Heart of the Shire Appeal and the Shire Ambulance Service is rarely made clear and the initiative is referred to as The Heart of the Shire.

[23] Although I will be discussing later in the paper how this collective responsibility is frequently located within the individual. It is often the individual that is evaluated rather than the community.

[24] The abbreviation of CPR, once a term that was used only by medical professionals, now appears to circulate freely in the public domain, in large part as a consequence of The Heart of the Shire initiative. The same could be said of the technology of automated defibrillator – once a frightening and especially medical technology. Sarah Franklin and Celia Roberts (2002) are currently engaged in interesting work considering the process through which medical terms relevant to In vitro fertilisation and genetic screening achieve cultural competence.

[25] This is taken from my fieldwork diary, session dated August 20001. The diary recorded different sessions of fieldwork activity and includes both my own accounts of activities and also verbatim quotes when possible.

[26] I would argue that being a Healthy Citizen is an effect of shifting sets of relations that change over time and place.

[27] In discussion with a First Responder (Bob) I was told that a responder must have their own car to travel to calls. He said that his wife often accompanied him to a call, she drove the car. Both are retired. He said he liked her to accompany him, in part for the support she provides and also for safety reasons, saying that you never know what you are going to meet. To be a First Responder it helps to have a partner and it is essential to have time and to have a car.

[28] Recall the quote from the DoH “In England only two to three people in every 100 survive a cardiac arrest compared to eight to nine in Scotland and 11 in the United States” (p36, 1999). Although this information is used to support the necessity for automated defibrillators and training in first aid such as CPR, it could also demonstrate the futility of such actions given the widespread high mortality rate for sufferers of cardiac arrest.

[29] Elsewhere I have discussed some of the implications of a ‘should’ discourse in relation to the UK cervical screening programme and women’s participation (Singleton, 1996).

[30] I have talked about this concept of being ‘doomed to fail’ so many times with Ingunn Moser that I no longer know whether the phrase his hers or my own. Either way it is her extremely careful and detailed work about living disability in Norway that has promoted my thinking on this.

[31] I am very grateful to Kath Smart for bringing to life both the wonder and the hard work of human/animal communication and for her additional and equally amazing ability to communicate this to me.

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Is there a dent in identities? Exploring risk perceptions of female-to-female transmission of sexually transmitted infections

Anne Rudolph

My research aims to further understanding in the hitherto largely under-researched area of sexually transmitted infections (STIs) among lesbians, bisexual women and women who have sex with women (LBWSW). My main concern will be how LBWSW and health professionals construct and deal with the issue of female-to-female transmission of STIs. I argue that constructions of identities have a significant impact on the way in which risk is constructed. The research will involve focus groups, semi-structured interviewing, and work within a discourse analytic framework. My approach will be informed by the interdisciplinary field of feminist and gender theories. I intend this research to contribute to conceptualisations of identity, embodiment, and risk.

Is there a dent in identities? Exploring risk perceptions of female-to-female transmission of sexually transmitted infections

Introduction

The following text offers a synopsis of my current research-in-progress on risk constructions of female-to-female transmission of sexually transmitted infections (STIs). I will give a brief overview of the topic, my theoretical framework and methodological approach, and outline the fieldwork I intend to do. The *Science Studies Spring School* was an excellent opportunity to discuss this work with colleagues from a range of backgrounds and I very much welcome further comments and exchange (please see contact details below).

Topic and Context

This research explores how lesbians, bisexual women, women who have sex with women (LBWSW)[1] and health professionals construct risk of female-to-female transmission of sexually transmitted infections (STIs). The study aims to provide new insights into this hitherto largely under-researched this area has been demonstrated, e.g. through the National Survey of Sexual Attitudes and Lifestyles (Fenton 2001) and the commissioning of reports on sexual orientation research by the Scottish Executive (2003).

While there is very little social science research on STIs among LBWSW, existing studies (e.g. Dolan 2001, Farquhar 1998, Patton 1994, Richardson 2000, Wilton 1997) strongly point to the centrality of questions of embodiment and identity in relation to lesbian safer sex issues. Accounts of risk constructions of STI transmission between women suggest that it is not considerations of bodily materiality, i.e. female anatomy, but other non-material criteria that formed the basis for risk perceptions. In the mid-1980s, for instance, lesbians came to be seen as a ‘high risk’ group for HIV transmission, because they were associated with male homosexuals. With the so-called ‘de-gaying’ of the disease, lesbians were no longer associated with HIV (Richardson 2000). Identity also formed the basis for risk assessment among a number of research participants in a study carried out in the US, who alluded to lesbian identity as offering “cosmic protection” (Dolan and Davis 2003: 30). Another example that raises questions with regard to the role of identity in risk constructions is the common recommendation in lesbian safer sex education to use dental dams[2]. While dental dams became icons for lesbian safer sex, they were hardly mentioned in safer sex education for heterosexuals. What is “different” about “the lesbian body” that prompted calls for special barriers for oral sex between women? Or asked differently, why is the (heterosexual) male mouth ‘immune’ to STIs?

Overall, there is a trend away from the concept of identity-based ‘risk groups’ in discourses on safer sex. Educational leaflets are increasingly formulated in terms of sexual behaviour rather than sexual identities. However, the simple eradication of explicit references to sexual identity will not be sufficient. The above examples show that the workings of identity in risk assessment are multifaceted and complex. Although it can be argued that identities have been dented to some extent, at least with regard to some safer sex discourses, the examples just illustrated point to the importance of identity in risk constructions. Another striking aspect in all the above examples is that the body seems to be of little importance or even absent in the risk assessments of STI transmission. Bodily materiality seems to be of little concern.

Through my research, I aim to investigate these issues further by drawing on feminist theories of embodiment. Feminist theorisations of embodiment offer the possibility to interrogate absences of the body in discourses on lesbian safer sex whilst focusing on questions of identity that seem crucial in risk constructions. Concepts of embodiment thus provide a useful analytic framework, because they allow me to address questions of bodily materiality in relation to sociocultural dimensions that have proven central to debates of STIs among LBWSW. Key texts with which I shall engage are Grosz (1994), Butler (1993), Braidotti (1994), Gatens (1996), and Ahmed (2000). Through bringing new empirical data into dialogue with these theories, I intend to further feminist conceptualisations of embodiment, sexuality, identity, diversity and risk.

Methods

I intend to conduct focus groups and follow-up individual semi-structured interviews with 25 (or until data saturation is reached, with no new themes emerging) self-identified LBWSW and 25 health care providers in the North West of England. Combining these two methods has proven successful in qualitative research with lesbians. Focus groups are particularly conducive to discussing sensitive issues and a useful tool for data triangulation and exploring interview themes (Dolan 2001, Farquhar 1998).

Sampling strategies: Due to the absence of records of sexuality in databases which could provide the basis for sampling, lesbians are defined as a ‘hard to reach’ group. A standard way of recruiting lesbians and bisexual women, which I am going to follow, has been via community centres, lesbian-specific services and media. As this is likely to recruit LBWSW who identify with ‘the lesbian community’, I will also advertise the study in genito-urinary medicine clinics and general practitioner surgeries in order to obtain a more diverse sample.
Health care providers will be recruited through gatekeepers in the National Health Service. I aim at interviewing health professionals who work in settings that do not offer lesbian-specific services, as these are more commonly available to LBWSW.

A diverse sample of research participants in terms of ethnicity, sociocultural and economic background, age and physical ability will be aimed for. The need for further methodological developments in this area is widely acknowledged (e.g. Dolan 2001, Scottish Executive 2003) and my research is intended as a contribution to this.

Data analysis: The data will be analysed using post-structuralist frameworks of discourse analysis (e.g. Potter and Wetherell 1987, Burman and Parker (eds) 1993). I will draw on other studies to enrich the discussion of my fieldwork material. Permission has been granted for me to analyse the transcript of the focus groups on Bacterial Vaginosis, conducted by the Vaginal Health Project, University of Washington, Seattle (for further information about this research project, see Marrazzo 2005). [3] This material will offer comparative data that can point to the specifics of regional space and its bearing on the constructions of risk. In addition, I will analyse various texts (e.g. policy documents, pamphlets, lesbian and 'mainstream' safer sex educational materials, videos, lesbian magazines, websites, clinical research) for their discursive content regarding risk and to contextualise the interview and focus group data.

Research Questions

The main questions this study will address are:
How do LBWSW and health care providers construct (the absence of) risks of female-to-female transmission of STIs? What influences these risk constructions?
How are (sexual) identities constructed and what role do they play in risk assessments of female-to-female STI transmission?
What is the role of the body in risk constructions of female-to-female transmission of STIs?
How are these constructions of risk related to questions of ethnicity and other "differences"?

Outputs

This research will contribute to the understanding of sexually transmitted infections in LBWSW and deepen feminist theories of embodiment by drawing on the case of STIs among LBWSW. It will also contribute to refining methodological approaches in lesbian health research. It is hoped that the project will have a positive effect on future research, policy-making and practice in the field of lesbian sexual health, not least through addressing pressing questions regarding diversity among lesbians.

Notes

[1] I am using the term LBWSW to hint at the diversity of women who have sex with women and, by going beyond the term 'women who have sex with women', which is frequently used in clinical research, point to the importance of identity. However, these terms are complex in themselves and are not to be understood as fixed categories. Terms referring to (sexual) identities and their meanings are not necessarily stable, but can, for instance, change over time or vary according to the setting in which they are used. Women who identify as queer, dyke, gay or homosexual might or might not feel represented by the term 'lesbian'. Not all lesbians identify as women. Taking these heterogeneities into account will be paramount to my research.

[2] Square sheets of latex used for safer oral sex (cunnilingus).

[3] Online information about the Vaginal Health Project and other lesbian sexual health research and information is available at www.lesbianSTD.com.

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Acknowledgements: My particular thanks go to Prof. Hilary Graham, Dr. Gail Lewis, Dr. Vicky Singleton (University of Lancaster), Dr. Jeanne Marrazzo and Kathleen Ringwood (University of Washington) for their valuable advice and support of this project.

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Performing Bodies

Following ‘morbid obesity’ beyond the operation room: mundane practices and the ontological politics of care

Jordi Sanz Porras

For many morbid obese patients, bariatric surgery becomes the only way to improve in their condition. This kind of extensive surgical procedures are major gastrointestinal operations that (a) seal off most of the stomach to reduce the amount of food one can eat and (b) rearrange the small intestine to reduce the calories the bodies can absorb. Bile and pancreatic secretions, which are necessary for digestion of food, are directed away from the food. How is this surgery drawn together? What kind of semiotic-material relationships and ensembles bring into existence ‘the morbid obese body’ within this kind of specific surgery? Following Latour (2004), these questions tend to overemphasize the importance of technoscience as the model taken within STS to give account of the real. Although technoscience plays a key role in the enactment of medical realities, not all modes of collecting, modes of bringing together ‘morbid obesity’ are within the medical world. Consequently, bariatric surgery is not taken as an effect to be explained within medicine but as a point of departure in my research: what happens with ‘morbid obesity’ after leaving the hospital? Does it disappear? Does it change? Or both? I would like to argue that ‘morbid obesity’ does not finish with bariatric surgery and, beyond the operation room, there are less medicalised mundane practices but equally important in which ‚morbid obesity‘ is made present in specific ways. Harbers, Mol et al. (2002) explain that we should attend to care as another model to cope with the enactment of the real. I am now taking this work forward to understand how ‚morbid obesity‘ is enacted through the ontological politics of care in less medicalised and mundane practices beyond the operation room, Jordi Sanz Porras

Following 'morbid obesity' beyond the operation room: mundane practices and the ontological politics of care

Introduction

For many morbid obese patients, bariatric surgery becomes the only way to improve their condition. This type of extensive surgical procedure is a major gastrointestinal operation that (a) seals off most of the stomach to reduce the amount of food one can eat and (b) rearranges the small intestines to reduce the calories the body can absorb. Bile and pancreatic secretions, which are necessary for the digestion of food, are directed away from the food. How is this surgery performed? What kind of semiotic-material relationships and ensembles bring into existence 'the morbid obese body' within this kind of surgery?

These questions tend to overemphasise the importance of technoscience within Science and Technology Studies (STS) in giving an account of the surgical theatre as reality. Although technoscience plays a key role in the enactment of surgery, not all modes of collecting, modes of bringing together 'morbid obesity', take place within the medical world. Consequently, bariatric surgery is not taken as an effect to be explained within medicine but as a point of departure in my research: What happens with 'morbid obesity' after leaving the hospital? Does it disappear? Does it change? Both? I would like to argue that 'morbid obesity' does not finish with bariatric surgery and, beyond the operating room, there are less medicalised, mundane, but equally important practices in which 'morbid obesity' is made present in specific ways. Harbers, Mol et al. (2002) explain that we should attend to care as another model to cope with the enactment of the real. I am now taking this work forward to understand how 'morbid obesity' is enacted through the ontological politics of care in less medicalised and mundane practices beyond the operating room.

Biographical Note. This article is my first step as a debuting sociologist in the field of Science and Technology Studies. It deals with the anxieties and passions of raising new and tentative research questions in a incompletely unknown field. This article incorporates biographical notes because such notes lie behind every article that we as sociologists write and, in some cases, they are made invisible. However, in this article I would like to acknowledge and make explicit that writing goes along with many other affairs, such as feelings, setbacks, personal experiences, meetings with my supervisors and so on. Therefore, what I did was to connect the personal and surrounding circumstances that went along with the writing of each section of this article.

Section 2 deals with my background as a 'sociologist of meaning' and, closely related, obesity as a 'social construction'. Likewise, I talk about my first encounter with Science and Technology Studies and how this encounter ended in conceptualising obesity as a decentred object. In Section 3, I proceed by explaining how I became interested in enactments of obesity in my *vie quotidienne*. This clashed with the metaphor of technoscience used in a great variety of papers within Science and Technology Studies. I explain how I began to look for alternative metaphors both within STS literature and within obesity practices beyond the operating room. Finally, in Section 4, I conclude this paper by summing up my early conclusions derived from initial interviews with two obese patients who had bariatric surgery.

Decentering obesity in nutritional sociology: a Science and Technology Studies approach

The notion of food in sociology has recently been taken seriously as an issue of intellectual interest. Perhaps it was so obvious that all human beings share a biological need to take nutrients at regular intervals that sociologists had left the study of food to the domain of medicine. Metabolism, proteins and the digestive system are common terms that we use in our daily life and which sociologists do not dare challenge. Food, dieting and obesity as fields of study were left out of the domain of what was considered to be sociology.

It has only been in the last two decades, with the birth of Nutritional Sociology, that food has been recognised as an important actor in the construction of social relations. For this reason, it was initially anthropologists, followed by sociologists, that started to ask themselves about the relation between food and society. They define food as a social activity, food as an activity that is produced in a social context (Mennell, 1985 and Gregory, 2000). They are interested in the social dimensions of the food system, the social organisation of eating and the patterns of food consumption/production in our societies. Against the biological determinism of medical sciences, they argue that food consumption is not limited to nutrients but rather also includes gustatory experiences associated with cultural meanings.

Regarding obesity, Nutritional Sociology criticises biomedical approaches to obesity by saying that medicalisation becomes scientific reductionism with a theoretical commitment to individuality. For this reason, Nutritional Sociology tries to shed light on the ‘social dimension of obesity’. One should consider the so-called ‘social patterns of obesity’ in relation to class, gender and ethnicity. Zhang and Wang (2004) show how obesity is affected by class, gender and ethnicity in the US. They introduced the Concentration Index in order to assess the socio-economic inequality in the distribution of obesity among American adults between the ages of 18 and 60. They concluded that when compared to other age groups, there is a stronger, inverse association between socio-economic status and obesity among men, as well as greater socio-economic inequality among middle-aged adults (age 41 - 49). Likewise, Gordon-Larsen and Ward (2003) elucidate how overweight-related behaviours of Hispanic immigrants of the US are related to the process of acculturation to the new society. Multivariate analysis indicated that longer US residence was associated with an increase in the number of overweight individuals among Puerto Ricans and Cubans due to the fact that they are likely to have lower family income and to live in areas of higher immigrant density and greater linguistic isolation.

The biological layer and the social layer: sharing the same object. At least, this is what I thought when I was about to finish my degree in sociology in Barcelona. But this belief changed when I began a Masters programme in Social Psychology in the same university. The biological layer was for me just one side of the coin. One was still left untouched. I learned that sociologists talk about mundane practices. So, why could we not talk about what we eat in our daily meals? Of course, I acknowledged that the sociological discussion about food has to be made in a different layer than the biological one. My knowledge in nutritional sciences was very limited and I felt that I should respect figures with expertise such as doctors, nutritionists or dieticians who were authorities in this field. A sociologist had a lot to say about the social dimensions of food. The assumption was that my sociological account could be added to a medical account of food, so that the resulting knowledge would be more comprehensive. Finally, I thought that what sociology and medicine shared was the same object of study, but seen from different backgrounds and perspectives.

In short, Nutritional Sociology concepts such as eating habits, the rationalisation of diet and the medicalisation of obesity seem to build up a link among food and diet to explain the existence of obesity as a social phenomenon: the presence of food (overconsumption of food) and the absence of dieting (management of food intake) constitutes the essence of obesity as a social epidemic.

My donut as a decentred object. After finishing my Masters programme in Social Psychology I started with my doctoral thesis. It was not easy because the word itself, 'thesis', still scared me. Books on theory, books on methodology, books on how to write a 'successful thesis'… It was amazing and for some time I was a little bit lost. I used to spend hours surfing the net and databases pursuing 'The Article' that could help me with the plot of my thesis. On one occasion, I came across an article about materiality and sociality (Law and Mol, 1995). I did not think that this piece of writing could do much for me. I decided to read it when I was on the train back home from university. What happened was that those lines, read in just an hour-long journey, were able to cast into doubt three years of a PhD in Social Psychology. It was not that food, diet and obesity had two sides: the social and the material. This division could only be justified within a theoretical framework, but social practices did not necessarily follow this assumption. Food, for example, was at the same time materiality and sociality. I started to see my donut slightly differently... My donut was an object not only because *of an attached social meaning (the social layer), but also because of the amount of sugar it contains, how it was wrapped, or how it tasted to me (material layer). By the same token, obesity as a 'being' was not only about the social prejudices and discrimination against the obese individual. Neither was it about the social construction of obesity. Obesity in practice was about calories, saturated fats, supermarkets, dieticians and pills to reduce weight. I learned that sociality and materiality were not categories that explained the reality we live in, but categories to be explained in practice. They were relational effects more than constituted realities. This means that food, for example, is not a unified thing but might adopt multiple versions according to how materiality and sociality are brought into existence. Food, then, is a local construction. Do you want to hear about the multiplicity of my donut? Although we only see one donut, the one that was in my hand differed from the one constructed by the list of ingredients on the package or, finally, the piece that was digested in my stomach. This had terrible consequences for the assumptions I was working with. Do you remember them? Yes, the assumptions were that sociology and medicine shared the same object of study and this allowed the possibility of adding together different kinds of knowledge to obtain a whole picture of the reality of food, dieting or obesity. However, the assumption that there is a unified object was reversed and I never thought of the possibility that objects that medicine and sociology were dealing with were, in fact, different objects. I began a process of decentering my own object of study as a bounded, unified and discrete unit (Law, 1991). This was the point where I departed from Science and Technology Studies.*

One of the most interesting developments in the 1990s in sociology was that of Science and Technology Studies (STS). Many authors will agree that society is not constructed solely through human action and meaning. Society is seen as produced in and through patterned networks of heterogeneous materials, various and continuously shifting associations (and dissociations) between humans and non-human entities. In other words, STS has de-centred the object of study of sociologists by bringing into the light the wide range of materials upon which life is produced. This movement started with the notion that technology could not be seen as impacting on society, a position that understood technology as a coming force from outside society itself. The response to this unsatisfactory position was to reverse the order of causality in the social impact approach by asking what it is that gives birth to and shapes technology. Machines, laboratories and design departments came to be seen as produced by a heterogeneous mixture of influences, including earlier technologies and social interests. The social and the technological were mutually constituted and embedded (Bijker and Law, 1991).

What sort of provocative insights can STS bring to the study of obesity? Which conceptual tools can STS offer to build up another array of questions that differ from the ones already asked by Nutritional Sociology? This is what lies at the centre of the exercise of decentering obesity as a definite and discrete phenomenon attached to social meaning: raising questions about an object that was clear-cut in Nutritional

Sociology, but from a very different array of conceptual assumptions. The following are some clues to help in the attempt to answer this question:

One: because some STS reject dichotomy as a mode of reasoning when questioning reality: not solely social or solely natural, but both at the same time. Social and natural are not categories that label and explain a piece of reality, but the social and the natural are realities themselves. STS is clear about what it proposes: moving from the nature of knowledge(s) to the nature of practice(s). By nature of knowledge(s), I would define 'the nature of knowledges' thusly: the reification of dichotomies as a mode of questioning reality. I mean that the social and the natural are categories taken as causes of the real, and different causes of the real imply different corpora of knowledges to identify them. For example, the obese body has biological functions (medicine) but, at the same time, attached social meanings (sociology). This tendency is more related to the interest in constructing a field of study than exploring in depth the object of study itself. In other words, this strategy might be read as an attempt to divide obesity into domains of expertise: medical sciences and nutritional sociology. In contrast, when one moves to the nature of practice(s), one moves to find out how the social and the natural are enacted in practice and how they constitute reality. So, the idea of causation and dichotomy are cast into doubt. One might ask how the obese body is enacted in medical practice by showing how materiality and sociality interfere with each other. In this sense, one should not approach the issue of obesity by believing in the assumption that it is exclusively biological or social (Law and Mol, 1995; Law, 2004).

Two: because STS considers reality a precarious achievement: reality is not fixed but an entity that changes and flows. Obesity should not be treated as an actor that is but as an actant that becomes (Callon and Rabeharisoa, 1998; Mol, 2000). This means that obesity is not a passive essence socially constructed, but an entity that is created and dynamically opens up new relational scenarios. Far from following individuals that together construct social meanings, I am deeply tempted to follow obesity in itself as practices enacted day to day in different topologies (Moreira, 2004). Obesity becomes an actant without a given physical location. It cannot be located, but is produced through locally anchored attachments, and these provide their existence. The network in which obesity is enacted is simultaneously global and local. Single positions (obese body) and structures (obesity as a social epidemic) can only be isolated by abstraction. 'Micro' and 'macro' may serve as analytical concepts and tools, but they do not exist as pure entities, independent of each other.

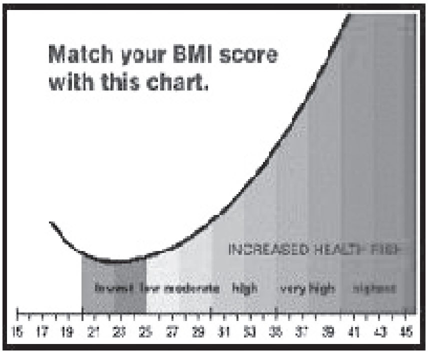
Three: STS casts into doubt the representation of reality. Instead of researching how reality is represented, one should consider how reality is enacted and performed. It is not depicting which representations of a single reality are at stake, but how a reality is enacted in day-to-day practices. In other words, my aim is not to see how many representations of a reality are discursively constructed, but how this reality is semiotic-materially bound and drawn together in a specific location. When you or

I match our Body Mass Index in a chart like this, obesity is enacted as health risk, distinguishing several degrees of obesity in relation to the risk of death. Colours are in charge of signalling and warning us. “This single entity is then projected as a virtual object behind the ‘aspects’ of the surface. […] Does it express the truth about the object, approach it asymptotically, or simply offer one from a series of representations? Here, I am not exploring these questions, but looking instead at new ones.

I try to shift theoretical attention from objects that are represented, to objects that are performed. […] There is no controversy over truth, but a negotiation about practicalities. […] There is discussion about practicalities. In terms of technical specificities, therapeutic possibilities, priorities, amount of suffering, wishes.” (Mol 1998: 150-152) In the study of obesity, my aim is not to depict which set of medical representations of obesity are at stake, but how obesity is enacted in medical practice, which negotiations about practicalities occur and how they finally enact/perform certain versions of obesity.

Four: STS considers the importance of materiality in the constitution of reality. Material objects have a central and active role in the order of things that seemed to have only a social character. This means that objects have ‘politics’. “Artefacts have politics. They witness how artefacts may be strategically designed to have politics. They embody social relations in materials more durable than those of face-to-face interaction.” (Law and Mol, 1995: 281) For example, the role of food in the social construction of obesity is clear: the over-consumption of certain types of food constitutes a social pattern of eating, and this social fact is considered to have an enormous centrality in the existence of obesity that is widespread in late capitalist societies. But let’s construct the question by using another set of concepts: how does the materiality of food relate to the enactment of obesity in medical practice? This question implies considering food as a *political actant*: not only does food have a generative role in the clinical organisation of obesity, but it also, to a certain extent, legitimates this organisation’s design. In other words, the materiality of food maps the complex geography of obesity in medical practice.

In conclusion, my focus of research is not to approach the phenomena of obesity in terms of social constructs or any related sociological theory that exclusively relies on the meaning, or discursive layer. Instead, I am deeply interested in showing how obesity is enacted in and through medical practice as a semiotic-material effect, paying especial attention to food and dieting as generative nodes in the enactment of obesity within the medical world.



Decentering the metaphor of technoscience in Science and Technology Studies: enactments of obesity in less medicalised practices.

The process of decentering obesity as a discrete object compound of a social and a biological layer has resulted in an interest in exploring how obesity is enacted in and through the medical practice of surgery as a semiotic-material effect within the hospital. In this section I deal with the process of decentering the metaphor of technoscience within Science and Technology Studies in order to grasp enactments of obesity in less medicalised and mundane practices beyond the operating room.

Running out of critique? *Everything was going fine and I thought that I had nearly circumscribed my focus of research. However, in the sixth meeting with my supervisors they put in my hands one of Bruno Latour's latest articles, "Why has Critique Run out of Steam? From Matters of Fact to Matters of Concern" (Latour, 2004). I was deeply immersed in medical articles about bariatric procedures such us Roux-en-Y gastric bypass (RGB), when I saw my father overeating two pieces of a delicious apple cake after lunch and before going to work. I asked him: "Dad, don't you know that you are eating too much? You know already that this is not good for you…" His practical answer astonished me: "Yes, yes… I already know. But the apple cakes your mother makes are so tasty… What you don't know is that hard work is waiting for me this afternoon. There is a lot of wall painting today and I need energy!!! Besides, you know my boss… If I don't eat extra before going to work, then I am hungry and I have to stop. This means trouble with my boss. If he sees us eating while working he automatically thinks that we are lazy and wasting time". So: obesity was neither about bariatric surgery nor about medical practices. Obesity was about taste and energy intake to cope with hard work and avoiding problems with the boss. I was captured in a paradox: the metaphor I was using as a model to account for enactments of obesity, my mundane life in which I could see enactments of obesity, was going in a complete different direction. This seems to me what lies at the core of Latour's article: the metaphor of technoscience has been used but also abused in its use. In my view, the metaphor of technoscience has lost its power of critique: it is applied within STS as a norm to understand any medical practice. I realised that there are enactments of obesity that the metaphor of technoscience will not grasp, enactments of obesity which are immediately beside me. Metaphors are useful means of expressing ourselves, and when we struggle with new and unfamiliar concepts, their value is all the greater. What better way to get a grip on the unknown than to view it as a variation on what is already known?*

Of course, the illuminating power of a metaphor cuts both ways; it holds us back even as it pushes us forward. A good metaphor casts a strong light into a dark room and allows us to see its contents, but the single shaft of light provided by the metaphor illuminates parts of the room while leaving other parts hidden in shadow. Because a powerful metaphor has brightness and clarity, we think that we know what is in the room, but in fact what is hidden from our beam could be more important than *what is visible from the solitary vantage point provided by the metaphor. I am not advocating the abandonment of the technoscience metaphor. Instead, I am arguing for moderation, for putting it in its proper place as a useful means of expressing certain enactments in practice, rather than the centrally defining metaphor of our researches. I am claiming that the metaphor of technoscience might be used along with other alternative metaphors.*

On one side is Latour, who suggests that there are different ways of making collectivities and different ways of collecting (2004). For example, the field of law is a particular mode of doing and creating things and collecting things. Technoscience is another mode, as is the spiritual or the religious. Reality is enacted and made, but there are different regimes and modes of doing it. So there is a range of different ontological politics and possibilities. Maybe in Science and Technology Studies, we have overemphasised the technoscience as the mode of collecting. In the world of those who live with any particular disease, (medical) technoscience goes along with many other realities and experiences. What I derive from this is that analysing any particular pathology only in terms of medical technoscience within the medical practice (for example, bariatric surgery) is to overemphasise one of the multiple enactments among the many other possible ones. This is what Harbers, Mol and Stollmeyer (2002) clearly point out: the world of care as another metaphor that might go along with the technoscientific. The politics of being centred in technoscience implies at the same time the displacement or the marginalisation of somebody interested in an alternative politics of reality. Taking technoscience as the model implies a particular political ontology that fixes a centre in the enactment of the real, a centre that sketches convergent ways to depict how certain realities come into being.

On the other side is Law, who gives clues about the simplicity of defining the method of social sciences as a tool to clear up the mess of social reality and obtain a neat picture of what is happening (2004). Method (in social and natural sciences) cannot give a clear picture of any reality because reality itself is complex and messy. Reality becomes multiple and empirically based on fluidity. What does it mean in terms of method? Firstly, that our methods will be at best partial, unable to grasp our object of study as a discrete and coherent unit. Secondly, our methods are subject to the paradox of absence and presence when doing research, the absence and presence paradox when displaying a method of research: focusing on certain issues implies at the same time not paying attention to many others. And this is ambivalence: doing research implies creating presences and creating absences. Thirdly, this has a logical consequence: realities are enacted within the knowledge that describes them. Let me say this in other words: the methods that we use to do research help to enact the realities we study, in terms of both absences and presences. Our methods do not merely act as a mirror of the realities that we study, they also produce such realities in terms of what is visible and what is left invisible. So, here is my argument: metaphors (1) are at best partial, (2) are subject to the paradox of absence and presence, and (3) help to bring into being our object of study both in terms of visibility and invisibility.

First lessons from practice. *As a sociologist, I began my task of research in the theoretical frame of Social Constructionism. Meaning and the social construction of whatever your object of study was, were the prime movers of my sociological imagination. I was taught a dichotomised and sequential relationship between theory and method. In order to grasp the 'real discursive meaning', theory had to frame a consolidated research question. After having done so, I as a sociologist was allowed to go into the field and experience research in practice. So, you see: first theory and afterwards practice. This extended manner of doing sociology was completely undermined by STS, essentially because STS rejects dichotomy as a mode of reasoning. This means, in practical terms, that theory and practice in sociological research overlap. Theoretical abstractions only gain their value when the sociologist is in the field. This was my experience: I began to understand the tenets of STS when I started to contrast the way I was questioning reality with reality itself. At the same time, a second consequence of this undermining process was that theoretical abstractions could be reshaped by the practices that sociologist pass through. In practical terms, and following my argument, this means that practice itself becomes a source for adopting new metaphors in STS.*

What Harbers, Mol and Stollmeyer (2002) address in their work is the metaphor of care as an alternative model to give an account of the enactment of dementia. Through a study of the eating practices of patients with dementia in care institutions, they open up for discussion the concern of the materiality of care as an in-between among established ethical discourses of will and medical discourses of natural death. After a patient of dementia in an institutional setting loses his/her appetite, the question of whether patients should be force-fed to stop them from dying comes to the forefront of the practicalities of decision-making. Not doing so might be construed as an act of illegitimate killing. What dementia challenges is the category of will as a deliberate act. In the ethical discourse this problem has been solved by widening the category of will from conscious acts to embrace physical embodied expressions in order to cope with the issue of food denial. In the medical discourse, the rejection of food is seen as a natural stage in the disease trajectory when acting upon the body. The issue of care is not taken into consideration in either discourse. In the context of feeding a person with dementia, both discourses foreground the need for food, leaving the need for care that it can express in the background. Food can become a medium of care: that of nurses for their patients or relatives for their treasured dying ones. The materiality of care through food as a mediator is not caught up by either of the surrounding discourses surrounding the treatment of dementia patients. Food's texture, smell, colour and taste provide a source of delight as much as nutrition. This is the task of mediation that is brought into existence by the taste of chocolate: the care of the son for his mother, and of the nurses who give her chocolate when he cannot be there.

Metaphors are excellent tools to give an account of how any particular reality is enacted. However, my question is if this sentence could be reversed? I mean: could reality give us clues for new metaphors as well? My answer to this question is “yes”. And another proposal: to learn from the realities that, as sociologists, we pass through. This might result in realising that the metaphors that we are trying to use might not fit the research practice we as sociologists encounter. As a consequence, I decided to look for an alternative metaphor, both in readings within STS that did not overemphasise the role of technoscience, and in the practices of obesity I encountered for the first time in the fieldwork.

Concluding remarks

After the patient leaves the hospital, bariatric surgery calls for the psychological preparation of the patient and a fairly long period of adaptation to life with a small stomach and malabsorptive intestines. It compels patients to change their eating habits radically, and makes them very ill if they overeat. Also, after bariatric surgery is performed, patients remain at lifelong risk of nutritional deficiencies. The greater the motivation of patients to lose weight, and manage the post-operative requirements of dietary modification and behavioural therapy, the more successful bariatric surgery is likely to be in solving their obesity and weight problems. One of the people interviewed relates meeting with a physician before entering the operating room:

> Before the surgery, my physician clearly told me that I should show them the way I was going to change my eating habits and which activities I will undertake in the future. Besides, he explained to me that after leaving the operation room I will be exclusively given water for a long time and no complaints such as “I am hungry” will be accepted.

Within the medical world, morbid obesity is treated as a naturally given disease and a malleable discrete entity at various levels of scale: metabolic (drug treatments), physical (exercise and diet) and psychological (behaviour modification therapy). The epistemological requirements of scientific medicine carry with them a commitment to the idea of the human body as a coherent, naturally given biological fact. This is what one of the persons interviewed explained to me, after she had seen several specialists and felt her body fragmented:

> My gastroenterologic surgeon, Dr Delgado, tells me that a nurse will call me when the insurance clears. We shake hands and end the meeting. I meet Nora, the nutritionist on the way out. She’s happy and thin, like you’d expect a nutritionist to be. […] My surgeon requires a pre-op psychiatric screening. The psychiatrist asks me about my family: I tell him. The psychiatrist asked me if I had bouts of depression or entertained thoughts of suicide. Yes; no. [...] I turn in my three-day food diary: no junk, no sugary stuff. Just

> lots of food. Because I've already asked Dr Roll and the psychologist, I ask Nora if she has worked with anyone for whom the surgery has failed. Surprisingly, she says yes, and promises to give me some names so I can talk to them before my surgery. I ask her about the traits of the people who didn't succeed with the surgery. She tells me that they: (1) didn't change their behaviour, (2) drank liquids with meals, (3) didn't take the lifestyle changes to heart and (4) were all female. […] I felt my body being fragmented in many professional pieces. You know… like a puzzle that finally turns into a whole.

This enacts a simple definition of treatment. For example, bariatric surgery is defined as the tool/process in charge of curing morbid obesity as pathology. In this sense, treatments produce good health.

Following this pathology-treatment simplified relationship, we might be tempted to think that 'good health' is narrowly related to the transition from the clinical condition of 'morbid obesity' to the clinical definition of 'severe obesity' according to the Body Mass Index of the afflicted person. At the macro-level it seems that this person is 'cured', but this state of being cured is a state that at micro practices is turbulent and unclear, multiple and fragmented. Surgery, as one of my interviewees explained to me, "only does the 50 %":

> I carried on drinking a quarter litre of water and a quarter litre of peach juice every 24 hours. What happened was that my ability to smell became highly developed and I could smell what was prepared in the kitchen: today fish or omelette… Well, I knew that this wasn't for me but for other patients. For me, water and juice was enough. I took a decision and crossed the border and now I had to work hard to keep what was done within the operating room. I didn't want to eat again for the rest of my life, because surgery only does the 50 % and the other half depends on you, yourself. You know exercise and new eating habits.

The relation between treatment and 'good health' tend to be more complex. The effectiveness of a treatment has to be evaluated in relation to the mundane life of the person afflicted beyond the end of the applied treatment. This means that 'good health' is a consequence of treatment, exclusively a practical matter. And these practicalities are in relation to the new mundane versions of morbid obesity being enacted. Here I offer a list of three versions of obesity according to my early materials gathered from the field:

Obesity as (self)rationality. This version of obesity derives directly from the medical domain. Obesity in this version becomes a set of rules about what to eat and how to eat properly in order to avoid post-operative related problems. It is based on a strong type of nutritional ascetism, constantly trying to balance the amount and the texture of food to the re-configured digestive system. One example of this enactment of obesity is the fact that a person who has undergone bariatric surgery is an expert in eating calculation.

> I give myself 300 calories per day of chocolate (because I can't live without it) and I try to always think before I put anything in my mouth. If I don't love it, then I don't waste my calories on it. The biggest lesson I have learned is "you do not have to finish it." What works for me is small portions. I have anything and I mean anything, but only a little bit. I think each person has to find the method that will work for them. It has taken me 46 years and major surgery, but I think I have finally found my personal method. I eat about 8 times per day but only about 150 - 300 calories each time. Sometimes it is protein, sometimes fruit, sometimes pretzels, sometimes veggies, sometimes a muffin, sometimes chocolate.

Obesity as (self)care. Obesity as (self)enacted takes its shape when the materiality of food becomes a means of self-sustainability or sustainability of others. In this cases, the materiality of food is not framed under the 'balance rule', but under the frame of feelings of need and worries about relatives. For instance, obesity as (self)care is enacted in relation to pregnancy. Within this period, the materiality of the food required for double feeding (mother and foetus) and the digestive system of the pregnant women do not fit together. The pouch that is a result of bariatric surgery is not initially prepared to absorb the amount of food involved. This means that the pouch, as fluid object, will adapt to the present state and will itself enlarge:

> I had gastric bypass in 1989 at 155 kilos. I lost down to 88 kilos then regained to about 90 kilos. I held at 100 kilos for 9 years until 1998 when I got pregnant and had my son. During pregnancy I gained to 127. After, I got back down to 113 kilos but I noticed I could eat anything I wanted with no limit. It was like the surgery wore off or my stomach stretched, after back trouble and steroid injections I again ballooned to 130 kilos.

Obesity as (self)responsibility. This enactment of obesity is related to the ability to respond and give an account to others about the disappearance of obesity made real as a single and discrete unit. It is the ability to respond to the guarantees offered by the process of surgery in combination with personal effort. This means that obesity as (self)responsibility turns up when the logical trajectory of obesity evaporation (bariatric surgery + new nutritional habits = thin and healthy body) is broken. Feelings of personal failure and regrets appear:

> Three months after the operation, I began to feel better and started swimming. I could not walk alone beside the swimming pool because I felt a little bit weak. I was able to carry on and, step by step, 50 kilos disappeared from my body with a lot of effort. I felt happy. I felt that a new life was beginning. I thanked God to see myself only weighing 95

> kilos. I felt pretty again. People who knew me before I entered the hospital, congratulated me and again I felt admired. In the next two years after the operation, it was like a dream because I felt that my relatives and friends acknowledged the sacrifice I was carrying out. When my husband fell ill, I gained 22 kilos and everything was altered. I started again with the hell of dieticians and nutritionists… People who congratulated me in the past couldn't stop telling me regrets like "You were almost recovered… You did a lot for nothing…" I felt like I was being abandoned in the middle of the desert without water.

What I would like to argue is that the expected "social coherences" that bariatric surgery opens up also carry with them body incoherences (small stomach and malabsorptive intestines). Bariatric surgery will change patients lives mainly because the procedures undertaken by this kind of invasive treatment are not reversible, and after leaving the operating room the person will be embedded with the (dis)ability to eat exclusively small amounts of food and a low capacity for assimilating nutrients.

> I have anything and I mean anything, but only a little bit. I think each person has to find the method that will work for them. It has taken me 46 years and major surgery, but I think I have finally found my personal method. I eat about 8 times per day but only about 150 - 300 calories each time.

Strict dieting and worries about what to eat and what not to eat, come to the fore of the routines among people who have undergone bariatric surgery. Likewise, the materiality of food changes dramatically: from the habit of eating solid food to the obligation of eating less solid food or even liquids within certain periods of time.

I was just under three weeks post op and I went through a similar experience. I began eating "real food" six days post op (I know, I know – bad, bad girl). Five days of sugar-free cookies were about all I could take... I was only able to eat about three small bites – but boy was it good! I felt like a human again! The next day I ate some steak (very, very tiny bites – chewed to puree) and felt great! That's the key – chewing the food until it's almost liquid in your mouth.

The promise of 'good health' for patients with morbid obesity is a state that has to be achieved in mundane life beyond the operating room. Body incoherences, although surgically created, are body incoherences. How are these body incoherences handled in mundane practices? The considered 'side-effects' of the surgical treatment carry with them a rearrangement of morbid obesity in terms of (self)control and (self)responsibility around what to eat and what not to eat. When morbid obesity is enacted by the ontological politics of (self)control and (self)responsibility, the (morbid obese) patient is considered clinically 'cured'. Following the Food Pyramid and avoiding junk food becomes a form of hygienism:

> I'm not real long term but I am at a point that if I wasn't careful I could certainly start to gain weight (20 months post op). The other answers were terrific. You have to think nutrition first. Eating junk foods will certainly make me gain weight. I have to ask myself about the foods I eat and be sure it's eaten for nutrition first. My diet looks more like the food pyramid in a smaller proportion except I do get the 60 grams of protein, putting me in a normal range for the protein.

In order to be a healthy person, the body incoherences have to be made absent by providing the consciously balanced amount of food that the post-operative digestive system is able to assume. Additionally, (self)control and responsibility around dieting implies reconfiguring the texture of food intended to be eaten.

However, the way 'good health' is held together in everyday life becomes a continuous problem: the ontological politics of (self)control and (self)responsibility might interfere with the ontological politics of (self)care. So here is where the lessons about interference were useful to me: This is what makes a praxiographic analysis so complex: that an entity can innocently stay the same throughout the story, unaltered between various sites. There are invariable variables. There is interdependence and, where two or three modes of ordering, two or three ways of enacting a specific object meet: there is interference too. What becomes of objects when practices interfere with one another?" (Mol, 2002: 121).

We have already seen one example of interference: how obesity was enacted after a woman had given birth and she gained weight. There is a second example that I would like to report in here: how obesity is enacted in a care relationship by eating chocolate as a source of energy intake.

Obesity as (self)care is related to the positions of the persons who take care of a relative when he/she falls ill. In this case, the materiality of food becomes a means to carry on with the difficult task and effort of taking care of an ill person. We must understand that care-related tasks are just one of the aspects of domestic labour and, going along with it, there are tasks such as cleaning, cooking and so on. Within the life of a post-operative person, the materiality of chocolate becomes a little pleasure by which she obtains energy to carry on working and coping with mundane troubles:

> Everything changed when my husband fell ill and I had to take care of him. Along with this situation, I had lots of problems with my daughter. The fact was that I started to eat chocolate unconsciously…. Well, not exactly! I would say consciously... Yes, yes... consciously!! Chocolate gave me strength to cope with my troubles in my daily life. The problem came when one day I decided to weigh myself again and I saw that…. I had gained 22 kilos!! It was terrible because I felt strongly bad about myself because I crossed the border back again! I started to wonder why this happened to me …Why me?

The ontological politics of (self)rationality prescribed by the post-operative diet might collude with events like social drinking or eating. To a certain extent, 'social coherence' in such contexts implies the ability to eat a certain amount of food that might overcome the amount of food that strict dieting recommends. They also imply a question of rhythm: there is an established 'social timing' for eating and drinking. The priority in this moment might be to take care of the situation and not disrupt the evolvement of the dinner by eating differently and less food than others are pleased to eat. 'Being socially able' in certain events implies eating a certain amount of food and certain textures.

> I had the RNY/fobi pouch procedure in October 2001. To date, I have lost 100lbs (and 25 the month before for a total of 125). I feel great. Occasionally, I get mad that I can't eat carbs (MAJOR CARB ADDICT before surgery), but I have found that once a month or so I allow myself to have a little pasta or a few bites of bread. Believe me, a couple bites is more than enough. I get so full. I eat pretty much everything – just very small, small amounts. I even on occasion have had to resort to fast food when I was out and about. When my family gets pizza, I just eat the cheese and toppings and maybe a bite of the crust. I don't crave sugar too much, but when I do I have a Snackwells chocolate crème Sugar Free cookie – tastes just like an Oreo! I don't think of myself as on a diet though, because I feel that would be sabotaging myself. If I crave something, I have a small bite – makes the craving go away and I don't have to fight with myself to not eat the whole thing later on.

'Social coherence' is related to the abilities of the digestive system that were eroded by bariatric surgery and reconfigured in the operating room. The size of the pouch that results from bariatric surgery might not fit the social demands placed on a stomach only able to digest certain textures and amounts of food.

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Refashioning bodies, reshaping agency

Dawn Goodwin

Poovey (1987) has argued that the anaesthetised ‘unresisting body’ can offer no impediment to a doctor’s interpretation of its conduct. In contrast, drawing on ethnographic data of anaesthetic practice, I suggest that the technological augmentation of the body required by present-day anaesthesia enhances the ability of an unconscious body to convey its needs and shape the course of its anaesthetic. In analysing the expressions of anaesthesia’s cyborgs I draw on Haraway (1997 and 1991), Latour (1999) and Suchman (2000) to reconsider the characteristics of agency and how an unconscious body might ‘resist’ or inform a doctor’s interpretation.

Refashioning bodies, reshaping agency

The purpose of anaesthesia is to temporarily insulate a patient's senses from the trauma of surgery. This necessitates a reconfiguration of bodily boundaries and a redistribution of bodily functions. Anaesthetic machines are called upon to assume some of these responsibilities, for example, frequently patients are paralysed in the process of anaesthesia thus disabling their capacity to breathe, and the anaesthetic machine, once programmed, will then assume this responsibility. Furthermore, in rendering the patient unconscious, anaesthesia incurs a silencing of the patient. Here, anaesthetic machines are again enrolled to provide an alternative route of expression with monitoring devices displaying 'readings' and measurements. An anaesthetised patient, therefore, is heavily reliant on the relationship that is forged with the anaesthetic machine. Indeed, the patient is technologically extended and augmented through this relationship. In a very practical and material sense the patient becomes a mix of organic and technological components, in other words, a cyborg.

"A cyborg is a cybernetic organism, a creature of social reality as well as a creature of fiction." (Haraway, 1991: 149) The cyborg figures prominently in the imaginary of science fiction but also takes a material form in one's "lived social relations", and particularly those of modern medicine (Haraway, 1991: 150). Gray, Mentor and Figueroa-Sarriera (1995) concur; cyborgs are not just entertaining fictitious creations, rather "there are many actual cyborgs among us in society". Those they cite are the creations of medicine – persons with artificial organs, limbs or supplements (such as a pacemaker), immunised persons reprogrammed to resist disease, and those pharmacologically reordered to behave differently. Lock (2002) argues that advances in medical science have brought about "a confusion of body boundaries and mingling of body parts never before possible" (Lock, 2002: 1406). This ambiguity has encouraged debates about bodies, technologies, and the forms and locations of agency. Gray et al (1995) note that whilst contemporary arguments grant machines agency and deny humans subjectivity, the traditional allocation, which casts humans as intentional agents and machines as inert, is tenacious. The analysis of cyborg relationships, and particularly those encountered in anaesthesia, offers an opportunity to reconsider this traditional view of agency.

Hogle (1999) suggests that in organ transplantation practice, managing "the ambiguities of the living cadaver" (Hogle, 1999: 149) mandates a reconceptualisation of the human body as existing in an altered, 'brain-dead' state. She contends that 'depersonalisation' is achieved by attending to the body through the technology that sustains it – by observing monitor changes, administering medications and fluids, inserting arterial lines, suctioning lungs and withdrawing blood for testing. Consequently, "the body, as a patient's body seemed to disappear" (Hogle, 1999: 148), an impression aided by the visual dominance of medical devices and equipment. Hogle describes how the body is dispossessed of its identity, by "collecting personal and bodily information, manipulating the body, and recreating the person and her body on paper" (1999:148), the donor's identity being displaced into the medical records. What remains, according to Hogle, is an identity without a body, and presumably, a body without an identity.

'Depersonalisation' practices have also been noted by Hirshauer (1991) in "the manufacture of bodies in surgery". He observed how the handling and manipulation of the patient's body, necessitated by anaesthesia, reduce the *patient* to a *body*. After producing narcosis the body is further reduced to its focal part, the remainder being obscured by sterile drapes. He concludes: The disappearance of everyday bodies also implies the person's anonymity. (Hirshauer, 1991: 289)

Hogle (1995) argued that the practices aimed at enhancing the quality of a donor's organs creates a "donor-cyborg". This classification of a new identity for the body, a cyborg identity, she suggests, enables one to apprehend what kind of entity it is, its use and place within the *human* social schema. She then questions "How much human-ness needs to remain in order for the entity to be a cyborg and not merely a commodity?" and "Can bodies phase in and out of cyborgism (…)? Or is there an ontological change (…) which becomes a permanent part of who and what we are? Can we not say there are differing conditions which create varying types of cyborgs and are they transient in character?" (Hogle, 1995: 213) Hogle contends that the answers to these questions have profound implications for how we treat bodies and persons. In contrast to Hogle's donor-cyborgs, in anaesthesia the aim is for transformations to be affected and *reversed* all in the period of a few hours. Studying anaesthesia's cyborgs, then, provides an opportunity to concentrate on this transience, how the transformation processes are accomplished, what capacities are gained and lost, and the work entailed in reanimating the human.

Within the sociology of health and illness, debate about bodies and technologies has tended to focus on how medical knowledge of the body is produced (Nettleton and Gustaffson, 2002). Atkinson's (1995) study of haematology exemplifies this perspective; he argues that the body is interrogated by a "powerful armamentarium of investigative machinery" which disaggregates the body into numerous traces and fragments to be read by competent observers. Whilst Atkinson usefully elucidates how practitioners use medical technologies to interrogate the body of the patient, this positions the patient as a passive object of knowledge, and focusing on the interactions between doctors and medical technologies obscures the relationship between patients and medical technologies and how this may *enable* patients to communicate as well as assisting doctors to interpret.

The importance of studying the nature of agency an anaesthetised, technologically reconfigured body can exhibit is indicated by Poovey's historical study of the administration of chloroform to women, to ease the pain of labour, during the Victorian period. She suggests that anaesthesia "silenced" the female body rendering it vulnerable to doctors' explanations of its behaviour:

> the silenced female body can be made the vehicle for any medical man's assumptions and practice because its very silence opens up a space in which meanings can proliferate (Poovey, 1987: 152)

Poovey argues that an anaesthetised body is a silent body dispossessed of the resources to resist the interpretations of doctors. The voice of protest is temporarily disabled by the administration of anaesthesia which offered few substitutes. However, much has changed in anaesthesia since the Victorian period, and the anaesthetised patient, I suggest, is no longer quite silent. Rather than being disabled, the anaesthetised patient's ability to communicate is transformed, as is the language and matter that can be communicated. The technological augmentation of the body engenders different forms of expression which in some ways compensate for the loss of language. Therefore, unlike the situation of the Victorian physicians described by Poovey, in my observation of recent anaesthetic practice the anaesthetists could not impose just any explanation on a given situation; the interpretation had to 'fit' with what the patient expressed.

Studying cyborgs: methods and theoretical resources

The data I use in this paper I collected between April 2000 and April 2001 in two NHS hospital trusts in the UK. I observed 34 anaesthetic 'sessions' at the primary fieldsite, and 5 at the second site for comparative purposes. Typically a 'session' involved obtaining consent from anaesthetists, patients, surgeons, and theatre staff, then accompanying an anaesthetist for approximately four hours during an operating theatre list, a morning in intensive care, or a period of on-call work, and taking contemporaneous field notes. I observed anaesthetic work in a wide range of surgical specialties and included practitioners ranging from novice 'trainee' anaesthetists and newly qualified Operating Department Practitioners (ODPs work in a manner comparable to operating theatre nurses) to consultants, nurses and ODPs of up to 25 years experience. Being a former anaesthetic nurse at the primary field site, certain ethical issues arose, and these I discuss elsewhere (Goodwin et al, 2003). I also conducted interviews with 20 staff selected to reflect the range of roles, levels of skill and expertise described above. These were tape recorded and transcribed, lasted between 30 minutes and two hours, and varied in style and purpose, some being quite general and exploratory, and others focussed on a critical incident or a recent episode from the interviewee's practice.

In this paper I am interested in the ways in which the technologically reconfigured patient, that is, the cyborg, informs the course of his/her anaesthetic. I have, therefore, drawn excerpts of data from each stage of anaesthesia: the ‘induction’ phase charts the production of this human-machine union and how capacities are changed in this process, the ‘operative’ phase focuses on how the cyborg expresses his/her needs during surgery, and the ‘recovery’ phase concentrates on the dissolution of the human-machine union, exchanging some modes of communication for the return of language-use. To analyse this data I draw on the work of Latour, Suchman and Haraway.

Latour (1999) argues that when studying relations between humans and artefacts it is a fundamental mistake to start with “essences”, be they ‘natural’ or ‘technical’ properties. Latour suggests that humans and nonhumans are “folded” into one another: “whenever we learn something about the management of humans, we shift that knowledge to nonhumans and endow them with more and more organizational properties” (Latour, 1999: 207) and “what has been learned from nonhumans is reimported so as to reconfigure people” (Latour, 1999: 208).

Following Latour, rather than trying to delineate what is essentially human or technological, it makes more sense to study how humans and machines are shaped by their relationships. However, one might argue that a basic asymmetry persists in that an artefact must be seized and activated by a human. Latour counters that “Purposeful action and intentionality may not be properties of objects, but they are not properties of humans either” (ibid, 1999: 192). He uses the example of a military gunner – what would a gunner be without a gun? Latour suggests that we must learn to attribute, to redistribute, actions among many more agents. The intent is not to efface the distinctive elements of a collective, the properties of humans and nonhumans cannot be swapped haphazardly:

> The name of the game is not to extend subjectivity to things, to treat humans like objects, to take machines for social actors, but *to avoid using* the subject-object distinction *at all* in order to talk about the folding of humans and nonhumans. (Latour, 1999: 193-4)

Suchman (2000), however, observes that in conceptualising machine agency many studies do animate machines with human-like agency:

> far from recognizing the deep interrelations of humans and artefacts, contemporary discourses of machine agency simply shift the site of agency from people to their machine progeny. (…) the assertion of autonomy for technology depends upon the obscuring of human authorship. (ibid, 2000: 9)

Suchman emphasises that “mutualities are not necessarily symmetries” (Suchman, 2000: 6), meaning that humans and machines do not necessarily constitute one another *in the same way*. She contends that the price of recognizing the agency of artefacts need not be the denial of our own: Agency – and associated accountabilities – reside neither in us or nor in our artefacts, but in our intra-actions. (Suchman, 2000: 8)

This discussion prompts the question of where to draw the boundaries of anaesthesia’s cyborgs; is the anaesthetist part of the cyborg? What of the nurses and ODPs? The relations extending from the patient-machine locus can be traced indefinitely, where, then, should the dispersement of agency end? I have drawn the boundaries of anaesthesia’s cyborgs around the patient and the anaesthetic machine for three predominant reasons. Firstly, this position focuses attention on the contributions of the patient and machine as two crucial components of anaesthetic practice easily overlooked by virtue of their ‘silence’. Secondly, I want to analyse the capacity and character of cyborg agency when both patient and machine lack the characteristics usually attributed to an agent:

> agents are those entities able to choose, to attribute significance to their choices, to rank or otherwise attribute ‘preference’ to those choices; (…) agents are able to intervene – to act – in order to (re)create links between their goals and the actions that they cover. (Callon and Law, 1995:490)

Here then, is an opportunity to scrutinise the forms of agency exhibited by a cyborg, to add conscious, intentional actors into this unit would only serve to cloud this analysis. Finally, although anaesthesia requires an anaesthetist, nurse, and ODP to interact with the patient and the machine, they are not connected in the same way as the patient and the machine. The bodily boundaries of anaesthetists, nurses and ODPs are not transgressed as the patient’s are.

Haraway (1991) has argued that which human-machine relationships are forged, and the boundaries that are drawn within, around and between entities, are issues that matter. She contends that the cyborg figure can be used to question the political and ethical effects related to which human-machine unions are promoted, and where and how their boundaries are drawn. Specific human-machine alliances and their boundaries, work in particular ways to enable some practices and to constrain others, to promote some modes of living and being and to denigrate others, to give voice to some actors and to silence others. Cyborg imagery may emphasise the extent of possibilities and how the fashioning of cyborgs is subject to historical and cultural contingencies (Haraway, 1997).

Studying cyborgs directs attention to the fusion of humans and nonhumans without effacing their difference; it does not displace the focus on boundaries, but offers the opportunity to reconfigure these boundaries:

> Cyborg anthropology attempts to refigure provocatively the border relations among specific humans, other organisms, and machines. The interface between specifically located people, other organisms, and machines turns out to be an excellent field site for ethnographic inquiry into what counts as self acting and as collective empowerment. (Haraway, 1997: 52)

Tracing the ways in which the expressions of anaesthesia's cyborgs contribute to the shaping of its trajectory through anaesthesia enables one to reconsider the characteristics of agency, how a cyborg may speak, and what might constitute 'resistance'.

Transient cyborgs: transforming voices

The production of the patient-anaesthetic machine union depends on the concerted work of the anaesthetists, nurses and ODPs whose labour constructs certain pathways and connections between the patient and anaesthetic machine. Discussing this 'induction' phase I first illustrate how the boundaries of both patient and machine are transformed. I then focus on the 'operative' phase of anaesthesia, when work on producing a cyborg has ceased and emphasis turns to the functioning of this patient-machine union. Here I question what new capacities this merger engenders and in what ways the cyborg can act. Finally, I look at the dissolution of the cyborg in the 'recovery' phase, how this is achieved, and the work that is necessary to re-establish the human and to shed the technological.

Fashioning anaesthesia's cyborgs

The anaesthetic room is a small ante-room attached to the operating theatre specifically for the purpose of inducing anaesthesia. In the scene below it is 8.20 am, the first patient on the operating list has just arrived and the ODP and the anaesthetist immediately begin work on transforming the patient into a cyborg, on forging those pathways that connect the patient and the anaesthetic machine.

> ODP: "Just sort your pillows out." He removes two pillows then sits the patient forward and unfastens the back of the patient's gown.
>
> Dr Butler: "Needle in the back of your hand. Can you just clench and unclench your hand." He fastens the tourniquet around the patient's left arm.
>
> The ODP applies monitoring to the patient – a blood pressure cuff around the patient's

> arm, electrocardiogram leads on his chest, and a pulse oximeter probe to a finger. He works quickly and efficiently.
>
> Dr Butler taps the patient's forearm. "Local anaesthetic" he says as he injects. He then smoothly inserts a cannula.
>
> Meanwhile the ODP has moved round the room to the left-hand side of the patient and connects the cannula to the prepared fluid infusion. He then secures the cannula with a dressing. (…) The ODP takes an endotracheal tube out of the cupboard, opens the packet, cuts about 2 inches off the end of the tube, removes the blue plastic connector from the discarded end and inserts this to the now shorter ET tube.
>
> Dr Butler injects from a syringe with an orange label *(an orange label signifies an opiate, I presume it is the fentanyl which he asked for earlier).* Dr Butler addresses the patient "A gin to go with the tonic. (Then to the ODP) Have we seen a surgeon yet?"
>
> ODP: "I'll go and have a quick look." He leaves the anaesthetic room.
>
> Dr Butler: "Need to see the whites of the surgeon's eyes before we start."
>
> The patient points to the screen "What are these figures up there?"
>
> Dr Butler runs through all the readings on the monitor explaining which readings refer to his heart rate, oxygen saturation, and blood pressure.
>
> We wait.
>
> The anaesthetic machine beeps 3 times, no-one responds. (…) Dr Butler takes a drug box out of the cupboard labelled Glycopyrolate *(used to increase the heart rate)* draws some up and injects into the cannula. The drip runs very quickly. The monitor shows the measurements: pulse 42, oxygen saturation 91%, blood pressure 153/81.

From the moment the patient enters the anaesthetic room, the ODP and anaesthetist immediately begin work on transforming the body of the patient: the ODP attaches the monitoring thereby enabling the expression of various parameters and diagrammatic representations. The cyborg can be seen to communicate with the anaesthetist when the anaesthetic machine emits three beeps signifying a heart rate of 42 beats per minute and below the monitor's preset alarm limits. Without any verbal reference the anaesthetist then administers glycopyrolate, a drug that increases the heart rate. So this is a form of communication that is non-verbal, it consists of numbers and diagrammatic traces, and it is supplemented with auditory and visual alarms. The anaesthetist begins work on modifying the patient's bodily surfaces to incorporate an 'entry' point to the patient's circulatory system, "a cannula" for drugs and fluids. The cannula provides the route through which anaesthetic drugs will be administered.

The ODP prepares for a further connection between the patient and anaesthetic machine when he removes two pillows. Of the boundary transformations detailed here, this connection is the most difficult to achieve: the patient and anaesthetic machine are connected by the placement of an "endotracheal" tube that runs from the patient's trachea to just beyond the patient's lips where it connects with the breathing circuit of the anaesthetic machine. The ODP positions the patient's head and neck to allow for the optimal view of the vocal cords through which the tip of the tube will be placed. The ODP then shortens the endotracheal tube to the requisite length. This tube fortifies the pathway between the patient's lungs and mouth, providing an uninterrupted route for gases to travel from the anaesthetic circuit to the patient's lungs. The ODP returns to the anaesthetic room wherein work commences on establishing this connection:

> ODP enters and addresses the patient "We've found a surgeon now so we're going to get started now."
>
> Dr Butler: "Going to give you some oxygen." He stands at the head and holds the black mask gently over the patient's face. "Your job is to keep your eyes open as long as you can." Dr Butler injects propofol (a white substance from a 20ml syringe – *a drug for inducing anaesthesia*) into the cannula slowly, as he speaks. The patient is still talking.
>
> Dr Butler: "You'll wake up about a minute after they have finished. (The patient's feet are still moving. It is quiet.) Open your eyes". No response, the patient has now stopped moving and talking. Dr Butler ventilates – squeezing the reservoir bag with his right hand whilst holding the mask on the patient's face with his left. Dr Butler lifts the mask off and inserts an orange (size 3) guedal airway *(This is a white plastic oval shaped tube, about 3 inches long, which lies horizontally along the tongue then drops down into the pharynx, this prevents the tongue from falling back and occluding the airway*).
>
> Dr Butler:"Classic tooth right at the front, perfect intubating tooth" He replaces the mask and ventilates, there is a slight leak where the mask does not quite fit the shape of the patient's face. The ODP presses the patient's face up to meet the facemask, the leak stops. Dr Butler injects atracurium *(a muscle relaxant)*. The ODP moves to uncross the patient's legs.
>
> Dr Butler:"Quite useful, that finger, Mark". He repositions the facemask and the ODP returns to pressing the face of the patient to meet it. Dr Butler chats socially to the ODP, about the ODP's son playing cricket.
>
> Pulse 44, oxygen saturation 98%, blood pressure 143/70. The drip runs more slowly

> now. Dr Butler looks at the clock and continues ventilating. The anaesthetic machine beeps – pulse 38.
>
> ODP: "Slow, isn't he?" *(gesturing towards the monitor)*
>
> Dr Butler:"He's on betablockers. I've given him some glycopyrolate already, good blood pressure though."
>
> The anaesthetic machine beeps – heart rate 40. The ODP picks up the laryngoscope. They both seem to be waiting for the blood pressure reading before intubating. Dr Butler takes the laryngoscope and inserts it, the ODP pulls the right side of the patient's mouth further to the right. Dr Butler inserts the endotracheal tube and replaces the guedal. The ODP inflates the cuff on the endotracheal tube and then places a piece of tape over each closed eye.
>
> Dr Butler: "If I only had one tooth left, I'd be inclined to whip it out." The ODP ties in the tube. Dr Butler sets the ventilator.

As anaesthesia disables the protective reflexes of the body, connecting the patient's and the machine's airways must be tied as closely as possible to the commencement of anaesthesia. After injecting the induction agent, Dr Butler confirms he is able to ventilate the patient then paralyses him using a muscle-relaxant drug, this generally takes three minutes to have an effect. Dr Butler and the ODP work with the airway devices – inserting a guedel airway and pressing the patient's cheek to the mask to prevent gases leaking out – to support the patient's breathing until the airway connection has been accomplished and the anaesthetic machine can assume responsibility for ventilation.

Again the cyborg's efforts to present himself can be glimpsed when the heart rate of thirty-eight beats per minute sounds an alarm on the monitor. The ODP comments 'Slow, isn't he?' and the anaesthetist explains that the patient takes betablockers, drugs that slow and regulate the heart rate. The anaesthetist adds that he has given glycopyrolate to increase the rate and balances this against the "good blood pressure".

As the required three minutes pass, attention returns to securing the airways connection. Dr Butler lifts the lower jaw using the laryngoscope and the ODP drags the patient's open mouth a little further to the right – activities aimed at visualising the vocal cords through which the tip of the endotracheal tube will be passed. A balloon at the tip of the tube is inflated to seal the connection and prevent movement of the tube back through the vocal cords and then the tube is securely tied in place. Once the tube is connected to the anaesthetic machine, gases can be delivered from the machine directly into the patient's lungs, a task to which Dr Butler attends when he programmes the ventilator.

Dr Butler then verifies the placement of the tube using a stethoscope to listen to the air entry into each lung. In addition to ventilating the patient, the accomplishment of the airway connection provides another communicative resource – the content and concentrations of inspired and expired gases can now be clearly articulated.

The scenario above gives a detailed account of the routine ways in which connections between the patient and anaesthetic machine are forged in the event of anaesthesia. These links provide the cyborg with a means of expression. In rendering the patient unconsciousness, the use of language and gestures which require intentionality are disabled. But a silent body is not necessarily an uncommunicative body, indeed the patient must still communicate, to indicate his status to the anaesthetist as he did when the pulse rate was precariously low. It is, I argue, the alliance of the patient and the anaesthetic machine that enhances the ability of an unconscious patient to convey his/her status. Moreover, the need for the ODP to press the patient's cheek against the facemask to achieve a seal demonstrates the specificity of such connections and how both skill and improvisation are involved in the marriage of standardised pieces of equipment with the infinite variation of human anatomy. Hence, unconscious patients are not homogenous but retain their individuality in the specificity of their bodily condition, the particularities of the human-machine union and the different interventions each cyborg demands.

Cyborg speaking

It is now possible to pursue how the communicative pathways are employed during the course of anaesthesia. The following is taken from a different observation session involving an entirely different cast of actors. Here, the cyborg's communication pathways are already established, and surgery has been ongoing for some time. Dr Smith is the consultant anaesthetist.

3 beeps from the anaesthetic machine.

> Dr Smith looks at the anaesthetic machine "Oh, what now? (He then looks at the surgeon.) You're hurting him, his block has worn off... let's give him something... (he turns to the ODP) 50 of tramadol..."
>
> The ODP enters the anaesthetic room and returns with an ampoule and syringe. Dr Smith cracks the ampoule open and draws the contents up into the syringe, he labels it and injects half of it.
>
> Blood pressure 131/78, pulse 59, oxygen saturation 98%, carbon dioxide 4.4, Isoflurane *(anaesthetic gas)* on 5%, 'VE' flashing 6.2.

> *(Later, as I typed these field notes in the anaesthetic department, I asked another anaesthetist, who was sitting next to me, what 'VE' flashing '6.2' means. She said that it stands for 'Volume Expired' and 6.2 is a fairly normal measurement. The anaesthetic machine will measure the volume expired and then flash to alert you to changes from that norm. For example, a painful stimulus will increase the patient's respiration rate, the volume expired will increase, and the reading will flash. Or, after administration of a strong analgesic the respiration rate will fall as will the volume expired and again it will flash to alert you. These are normal responses.)*
>
> Dr Smith turns the Isoflurane back down to 1.5. Blood pressure 160/98. He injects the rest of the syringe and throws it in the yellow bin bag and then writes on the anaesthetic chart. I ask Dr Smith about why the isoflurane was on 5%. He said it was just to 'dampen the bp' until the tramadol *(a pain killer)* worked. He said the respiratory rate was back to 14 now as well. Dr Smith writes on the anaesthetic chart. Blood pressure 144/87.

Even though anaesthetic agents induce unconsciousness they do not totally obviate the trauma inflicted on the body during surgery. The body responds to pain in various ways, often by an increase in heart rate, blood pressure, respiration rate or changes in other bodily parameters. Consequently, some method of analgesia is usually incorporated into the anaesthetic. Here, the anaesthetic machine beeps three times. This is followed by Dr Smith's comment that the surgeon is "hurting him" (the patient) and the assumption that the "block" (a procedure in which local anaesthetic is injected around a nerve pathway preventing the conduction of nerve impulses) has worn off. The cessation of pain relief provided by the peripheral nerve block necessitates the administration of further analgesics. The blood pressure and pulse are initially within "normal" parameters and it is by triggering the "volume expired" alarm that the cyborg indicates the presence of pain. Subsequent raised blood pressure measurements further support the anaesthetist's interpretation that the cyborg requires further analgesia.

The anaesthetist's response is twofold. First, he injects "50 of tramadol" (an ampoule contains 100 mgs) and following the subsequent blood pressure reading of 160/98 he administers the remaining 50 mgs. Concurrently he increases the concentration of the anaesthetic gas with the intention of deepening the level of anaesthesia and so lessening the awareness of pain. The excerpt ends with a lower blood pressure reading of 144/87 indicating that the anaesthetist's strategy is beginning to combat the pain incurred by surgery.

How can we know when the cyborg's attempts to present himself are successful, in that the anaesthetist interprets and responds appropriately? Perhaps the cyborg's efforts are successful when followed by actions that address the salient issue. For example, the volume expired alarm is followed closely by the assertion that the surgeon is hurting the patient and the administration of further analgesia. So the coupling of the cyborg's efforts to convey his status and appropriate action on the part of the anaesthetist indicates that the cyborg's expressions have been heard and understood.

Cyborgs in transition: reclaiming the ability to breathe

The recovery phase of anaesthesia refers to the gradual transition from unconscious cyborg to conscious patient. It begins in the operating theatre with the cessation of anaesthesia and the relocation of the responsibility to breathe from the ventilator to the patient. Retaining the monitoring connections, the patient will then be transferred to the recovery room for a period of close observation. Below is a description of the beginning of this transition wherein the patient recovers control of her breathing. We join the scenario after the operation has finished, the patient has been moved from the operating table to a trolley, and positioned on her side in preparation for removal of the endotracheal tube. As the patient has been undergoing Ear, Nose and Throat surgery, her head is at the opposite end to the anaesthetic machine to allow the surgeon access and space to operate. This necessitates some manoeuvring so the anaesthetist can reach both the head of the patient and the anaesthetic machine.

> Dr Woods: "Can we have her feet to the door and her head to the anaesthetic machine, that way I can reach the anaesthetic machine." The patient trolley is wheeled so it is at a right angle to the operating table. Dr Woods opens another suction tube, turns the suction on.
>
> Dr Woods: "She's not quite on her side is she?" (to a nurse) The nurse and Dr Woods reposition the patient's shoulders. The nurse is then called away to prepare for the next operation. The anaesthetic machine beeps.
>
> Dr Woods talks to a medical student "We might have to wait for the CO2 to rise before..." Dr Woods ventilates. She then takes the tape off the endotracheal tube. Machine beeps (a single beep signifying it has just recorded the blood pressure). The patient moves, the carbon dioxide trace is now undulating.
>
> Dr Woods says to the patient "Claire, deep breaths." The recovery nurse prepares the oxygen mask.
>
> Dr Woods: "Claire." (Then to the medical student) "I'll take the tube out when I'm happy that she is breathing regularly, not quite yet." Patient is still again, the carbon dioxide trace is now flat.
>
> Dr Woods: "Claire" The patient gags on the tube, she begins to chew it then stops and rubs her eye. The carbon dioxide trace goes up and down again.

> Dr Woods: “Deep breath in.” She squeezes the reservoir bag and pulls the tube out. The recovery nurse puts the oxygen mask on the patient. Dr Woods addresses the medical student: “So we know she is breathing because the mask is steaming up and you can feel her abdomen moving.” The recovery nurse and Dr Woods disconnect the monitoring and wheel the patient to the recovery room.

The dissolution of the cyborg first requires that the anaesthetist can reach both the organic and the technological components of the cyborg, then consideration of the cyborg’s expressions. Although there are signs that the patient is beginning to emerge from anaesthesia, these signs are capricious: one moment the patient is breathing – spontaneous patient movement accompanied by an undulating carbon dioxide trace on the monitor, the next she is not – the patient becomes still again and the carbon dioxide trace flat. The anaesthetist cannot remove the tube until these signs have stabilised and the ability to breathe can be firmly identified within the patient. Removing the breathing tube means the cyborg loses a communicative resource and the anaesthetist must be vigilant for other expressions which confirm that the patient is breathing independently: the anaesthetist watches the oxygen mask steam up and feels the patient’s abdomen rise and fall with each inhalation. Monitoring will continue in the recovery room for a short period but, as the patient regains consciousness, she is less reliant on the monitoring for expression, some forms of electronic monitoring being exchanged for modes of communication such as language use.

Adjudicating on when to begin this dissolution of patient and machine, the anaesthetist must carefully consider the signs: have they settled sufficiently to indicate a stabilised relocation of responsibilities within the patient? The skill of the anaesthetist lies in interpreting this language: the anaesthetist cannot fabricate just any account – their accounts are constrained by the expressions of the cyborg. The anaesthetist’s interpretation of a clinical situation, then, is achieved by considering the cyborg’s contribution alongside elements such as the patient’s medical history, contingencies of the surgery, other practitioners’ contributions, routine organisational practices, and the possibilities for action afforded by anaesthetic tools and devices. Taking these elements together, the anaesthetist crafts an account that lends the situation some intelligibility and indicates a direction for ensuing action. I examine these processes of negotiation, and how these ‘other’ elements also inform anaesthetic practice, in Goodwin (2005).

Therefore, unlike the situation Poovey describes with patients unable to resist the anaesthetist’s account of the situation, modern-day cyborgs in anaesthesia have some resources at their disposal to assist the anaesthetist in understanding their needs. Much rests on an account that accords with what the cyborg endeavours to convey. In the scenario above, misinterpretation would have resulted in a patient that was unable to breathe independently and dislocated from the resources to facilitate this, a situation requiring rapid reintubation. So the cyborg communicates through the connections and pathways established in the patient-machine union, and in a language that consists of numbers and diagrammatic traces. The anaesthetist must learn to set these expressions into an explanatory narrative that can safely inform the continuing action.

Resistance: a cyborg's contribution

The fusion of patient and machine necessitated by present-day anaesthesia redraws the boundaries of both patient and machine and transforms modes of expression: monitoring devices convey such details as heart rate, blood pressure, oxygen saturation, a diagrammatic 'representation' of the heart rhythm, and more. However, anaesthesia silences the patient, disabling the capacity to speak verbally. Inducing unconsciousness necessitates a further merger of patient and machine – a secure pathway between the patient's lungs and the ventilator must be established. The responsibility for breathing can then be relocated from human to machine. Presenting the volumes and concentrations of gases delivered to and retrieved from the patient further expands the communicative techniques of the cyborg. When taken together with the organic communicative resources such as the colour and feel of the patient's skin, the size of the pupils, and allied to situational knowledge of, for example, the contingencies of surgery and the patient's medical history, these expressions can convey the needs of the cyborg (Goodwin, 2005). Furthermore, the coupling of the cyborg's expressions with appropriate actions on the part of the anaesthetist – an elevated respiration rate and blood pressure being followed by the administration of analgesia – are an indication that the cyborg's efforts to present herself have been successful.

These boundary transgressions and the communication they enable, enhance the anaesthetised patient's contribution to the course of their anaesthetic; they are the means through which an unconscious patient can communicate. It may be an impoverished form of communication in comparison to the ability to verbalise, but the cyborg can express enough to assist the anaesthetist in constructing an account of his/her needs. Therefore, these boundary reconfigurations provide the conditions for resistance, in that the cyborg may contribute to and shape a doctor's interpretation. Poovey (1987) describes how Victorian women had no such resources and that physiological responses to anaesthetics were articulated as uninhibited sexual desires and fantasies mandating some form of control. In my observation of anaesthetic practice, the patient, technologically extended and transformed, has a voice and can contribute to an interpretation of his/her conduct. The anaesthetist cannot impose just any explanation on the situation. It is critical that the account coheres with what the cyborg endeavours to convey. As discussed above, a patient unable to breathe and disconnected from the machine that performs this function quickly induces a life-threatening situation.

An uneventful reversal of the human-machine union is not only important for anaesthesia but a measurement of its success. My conceptualisation of the combination of the patient and machine as a dynamic, vigorous, *acting* entity casts some light on why the attainment, maintenance and reversal of a cyborg state is precarious and easily disturbed, and therefore closely marshalled by a team of practitioners. So to answer Hogle (1995: 213): yes, bodies can phase in and out of cyborgism but accomplishing such 'transience' requires the support of human facilitators and technological devices, it depends on a connection with a network of humans and technologies.

Callon and Law (1995) argue for agency to be distributed amongst a "hybrid collectif" but concede that it tends to be attributed to certain parts of the collectif, significantly those that demonstrate language use and intentionality: "The agents we tend to recognize are those which perform intentions … but it does not have to be so…" (Callon and Law, 1995: 502). Despret (2004) describes how bodies communicate in spite of themselves, how a body may talk against the person's will, outside the frame of the person's consciousness. Anaesthesia's cyborgs provide another example of how bodies can communicate. The cyborgs I describe demonstrate how an unconscious being is not necessarily passive or to be considered homogenous, as the connotations of 'depersonalisation', the "dispossession" of patients' identities (Hogle, 1999), and the "anonymity" of surgical bodies (Hirshauer, 1991), imply. Rather unconscious patients retain their specificity in their embodied form, in the expressions their bodies and the technology produce, in their medical histories, and in the interventions their unconscious bodies require. Whilst an anaesthetic trajectory may conform to an anaesthetic plan, the precise course of their anaesthetic is shaped to a large degree by the unconscious patient through his/her union with the anaesthetic machine. I suggest that it is the union of human and machine that enhances this demonstration of agency. It is a distinct form of agency, lacking the characteristics of language use and intentionality, but it is still a contribution, one of the factors that shape how anaesthetic practice may proceed.

Notes

The data used in the article was originally collected for a study entitled "The problem of expertise in anaesthesia" financed by the NHS North West R & D Fund, project grant number RDO/28/3/05. I would like to thank all the anonymous participants – patients, theatre staff, and anaesthetists – for their willing collaboration. I also thank the other members of the 'expertise' project: Maggie Mort, Andrew Smith and Catherine Pope. This article was first presented at the 4S Conference, Atlanta in October, 2003 and I am grateful for all the comments and questions I received. Finally, this paper has been improved by the insightful comments of Maggie Mort, Maureen McNeil and Tiago Moreira.

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Notes on the social life of corpses

Majda Rajčanová

Through ethnographic research my primal interest was simply get to know: what's the matter with dead human body. It led me to different places and situations - pathology department and crematorium, and currently I draw my attention to the setting of transplantation. And during the time I also met, let's say, different texts from the field of actor-network theory, which are inspirative for me in looking on and talking about events surrounding corpses.

There are some means of places, aims of people engaged in there and some bounds – such as dead/alive, person/thing, body/machine - appear to be given and unambiguous. Not only historically or geographically these vary, but also in each situation or action we can see multiplicity of these bounds and goals. And through this multiplicity I try to think and talk about this

Majda Rajčanová

Notes on the social life of corpses

In my dissertation I focus on the theme of the corpse. I have devoted myself to this theme for several years, more or less intensively, as part of my MA thesis.

It was my intention to understand and describe what's wrong with the body of a person after they die. Much has been said about the taboo associated with death, or of how death is displaced (forced out) from the public space. If this is true, it applies even more so to the body of the dead. When we talk about death and dying as the inevitable end awaiting each of us, we are also talking about dying and the corpse: the corpse is inseparably linked with death. Like death, the corpse can come in different forms: depending on the different ways it is treated, we can see it from different standpoints, different perspectives. We can see and observe a dead body as something that is in the process of passing through different places, and revealing itself, appearing or emerging in different shapes and with different meanings.

In attempting to conduct an ethnography of the corpse, I follow it on its path to burial. I say path because when talking about someone who has died we often say that they have departed (passed away). One of the possible paths of a corpse is that which leads from a hospital ward, through the pathology department, to the crematorium, where it is then somehow transformed. It does not cease to exist, but rather it takes on a new form, a new shape. In anthropology they speak of a 'second body'. Up to this point my work has focused on the dead human body in its original state (form). When I refer to the 'original' body, the original 'state' of the body, it is necessary to put this in quotes. When I observe dead bodies in these places (i.e., in the pathology department or the crematorium), I quickly find myself in the difficult position of trying to see the body in its original form. The body that you see is actually in a very different form, a form that is physically different. This, however, should not be seen as being unusual because in our lifetime it is not unusual to see people in different shapes. We also should consider the entire situation that surrounds the dead and their body, and how we see it as threatening. At the root of our perception of the body there is more than the simple fact that it is a person, that it is human and that it is dead.

I would like to mention here that I have been inspired by the sociological work of Stefan Timmermans and his ideas concerning multiple identities. According to Timmermans, people have different identities, simultaneously, and they have different grounds or backgrounds. As an example, he elaborates on resuscitation techniques and protocols, on those situations when somebody is resuscitated: one person suddenly becomes the rescuer, and, potentially, the dying person later becomes a patient, and in the hospital in the emergency room becomes the monitors connected to the body (visual graphs, audio signals). In the process, he temporarily loses much of his original social identities, as at that moment, when the focus is on saving his life, such identities are not important. After being resuscitated, regardless of the result, these identities again become important, with some identities lost forever, and some new identities created.

Why do I mention this? Because in life, as well as in death, different characteristics come to be important: some characteristics are moved aside, to be replaced by others, but they are all still somehow connected. Well, perhaps it is better to say that on the path taken by a dead body we can see the effort and hard work that goes into keeping the identities together and on keeping them connected with the body. Even in situations where the body is dissected, where a person has lost the usual obvious identities, there is an effort to keep the body and the identities linked, for the future and the past. Making and maintaining these connections involves not only the dead person, his body, and the living persons around him and treating in a particular way, but also different protocols, the signs of protocols made by orderlies when they pass the body between them. For example, an orderly from one department of the hospital hands the body over to an orderly from the pathology department, and their presence is marked by their signature on the protocols. When handing over a body they also hand over numerous protocols, checking to make sure the information in the protocol matches the information written on the body, etc.

Connections. Connections also refer to another of my inspirations: Actor-Network Theory. This theory emphasises the importance not only of human beings (both living and dead, in this case), but also the importance of the various artefacts and instruments, technical instruments and technologies and forms and papers, etc. All of these – as they call it, humans and non-humans – are involved in some kind of network and are thus connected. The local, temporal result of this network is the situation, or character of the situation, or character or identity of a person. This result is never definite and infinite. In situations where a dead human body is seen, or the characteristics ascribed to that person, this process involves not only human beings, but also a variety of artefacts and perspectives and instruments (knives and measures, for example) and statistics and so on. The dead person and the body are not some kind of passive receiver or passive object of interest, but an important actor building and forming the situation, the character of the situation as well as the identities of others.

Some situation or moment, which we encounter on the path of the dead body

I talk about a path, about places, so it is obvious that the dead human body must somehow enter one place and then leave it to go to another.

Entrance

The deceased enter the pathology department (which I visited) through a side door, from the wide road leading to the entrance. But this is not the only entrance to the building. There are also two other entrances, which can only be accessed by a narrow passage. The front entrance is intended for the doctors and other employees. There is another entrance on the other side of the building, labelled "entrance for the bereaved". There is also the obligatory notice: "Office Hours MO-FRI..." Not all people enter the Department of Pathology via the same path. It is the same in the case of the crematorium, where the different entrances differentiate the bereaved and others, the dead and the living, the employees and the others. Depending on which entrance we choose, the doors express our intentions, and based on that the identities that are ascribed to us.

This reflects common experiences in our ordinary lives. Inscriptions such as "Entrance for the bereaved", "Unauthorised access prohibited", "Entrance for employees only", are common, clear signs that enable orientation in a social space. The goal of these inscriptions (signs) is to "divide up otherwise singular space and distinguish thus between otherwise same looking people" (Bauman 1996: 145). The variety of entrances express the variety of people, that, seemingly alike, arrive with different goals and intentions, and they act in different social contexts. However, they express the setting of a society, the social realities, in which people act, and as such, their behaviour.

The entrance differentiates the comers, makes distinctions between those who do and do not have access, and under what circumstances. The space which every single entrance reveals and which is accessible to every single comer, is not the same.

Transparent glass wall

The bereaved see the deceased only briefly, and what is seen is carefully controlled for those moments. The deceased can only be seen in a certain way. For example, if the body of the deceased has been extremely disfigured, too much marked by death and has entered advanced stages of decomposition, the body is closed within the coffin and the coffin is marked with a sign: OPENING PROHIBITED. Thus, seeing the deceased is permitted (and required) only in form; the form is that which is as close as possible to that which it had on this side of the grave (i.e. alive; the form the deceased had during his lifetime). Other forms – such as that revealing an autopsy or cremation – remain hidden from the bereaved.

Restored cuts

In this way the doctor protects himself against the dead, while at the same he needs to get as close as possible to the corpse. From his perspective, for a variety of reasons (in order to improve surgical skills, to check the effectiveness of the previous treatment or to pinpoint the cause of death), the doctor wants to get to know as much about the deceased as possible. The doctor thus inspects and gives a detailed account of the body, he removes single organs, he determines their weight, he scrutinises their shape through dissection and takes samples for testing later, and so on. Even in this, the image or shape of the deceased is carefully controlled. Every autopsy is performed in a similar way, and has its own rules. There are a series of prescribed incisions to open the human body and to perform an autopsy on particular organs. The body is not cut up arbitrarily, by inches, each and every inch, to examine all corners of the body. It is possible that autopsies were performed this way in the past, but now knowledge is gathered, to a considerable extent, in a systematic way which has led to the particular steps of the autopsy being standardised. In order to compare individual findings, every cut has to be done in a standard, i.e., always the same, easily reproducible way. In some cuts, a sort of sensitivity to the corpse is involved. If we look at the autopsy as a way of studying surgery, as a means of perfecting the procedures performed on a live body, then arbitrarily cutting the organs would not even be beneficial. When cutting a dead organ, it must be cut in such a way that the organ can easily be compared to a live organ. In this way, the image revealed by the autopsy should be the very same as that revealed to a surgeon during an operation. Furthermore, the procedure of the autopsy is subordinated to the requirement that the integrity of the human body is restored. The incisions, by which the body is opened, include the requirement that it subsequently be sewn back together. Though it can be seen as a purely medical issue, the autopsy is not unrelated to the context of other actions and their meanings, and its course contains those other requirements and is guided by an effort to regain the integrity and ‘beauty’ of the deceased.

Just a body

One of the specificities of the pathology environment lies in the fact that all corpses are naked basically the entire time, deprived of their civilian clothing, pyjamas and bathrobes. This also applies to jewellery and decorations, such as an engagement ring, that could indicate the status of a person, a social being. Whether the deceased was a faculty member, a father of three, an ardent fisherman or a former Communist, it all ceases to be important. Here, ‘only’ the body remains, as if the body that will undergo the autopsy has to become *just* a body. But this “mere” body begins to tell a story, proceeding to be subjected to different interpretations by others, appearing different depending on the different views presented by various cuts. This appears unexpectedly to some extent. Most social identities temporarily loose their importance and are replaced by a number of other characteristics. The weight and shape of the organs, their morphological modifications, colour, hardness, smell: all these are human features that come to be used to describe and differentiate. All these are important and observed.

This brings me to another inspiration: the ‘affected body’ described by Bruno Latour (*How to talk about the body? The normative dimension of science studies*. First written for a symposium organized by Akrich and Berg in Paris, September 1999, ‘Theorizing the Body’) In the begining of his text, Latour talks about an experiment, a small test he made during a conference. He asked everyone to write down the antonym of the word ,‘body‘. He writes: “In the long list I got, apart from predictable and amusing definitions like ‘antibody‘ or ‘nobody‘ the most arresting for me were: ‘unaffected‘ and ‘death‘. If the opposite of being a body is dead, there is no life to expect apart from the body, especially not an after-life, nor a life of a mind: either you are a body, or you are dead, you have become a corpse, you enter into some sort of macabre body count. Further on Latour continues: to have a body is to learn to be affected, meaning “effectuated”, moved, put into motion by other entities, humans or nonhumans. If you are not engaged in this learning you become insensitive, dumb, you drop dead.”

He also says: “Equipped with such a ‘patho-logical‘ definition of the body […] one is not obliged to define an essence, a substance (what the body is by nature), but rather an interface that becomes more and more describable when it learns to be affected by many more elements. The body is thus not a provisional residence of something superior – an immortal soul, the universal, or thought – but what leaves a dynamic trajectory by which we learn to register and become sensitive to what the world is made of. Such is the great virtue of this definition: there is no sense in defining the body directly, but only in rendering the body sensitive to what these other elements are. By focusing on the body, one is immediately – or rather, mediately – directed to what the body has become aware of.”

I have not thought this through yet, but I am affected by the idea that the body (and/or the dead-ness, and human-ness) is not something given but something that is *emerging* by way of the situations through which it passes and the entities it meets; and that there is an effort to ordain the death through the body, through the body being pronounced dead, and at the same time, after this sentence, the body is subjected to different procedures focusing on how it is affected, how it reacts.

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Locating Expertise

Personal, political, academic: The politics of fieldwork and my brush with Czech media stardom

Karen Kapusta-Pofahl

Through an ethnographic study of the networks of academy, NGO, and government members involved in the production, circulation and contestation of knowledge about and discourses on gender issues in the Czech Republic, my dissertation addresses both the politics of the production and use of expert knowledge and the myriad relations, locations, and practices that comprise the networks themselves. I am conducting this multisided investigation with an eye toward how the shapes of definitional power, authority, complicity and opposition shift as people and concepts interact with each other and transform and are transformed by these interactions.

Personal, political, academic: The politics of fieldwork and my brush with Czech media stardom

I would like to take this opportunity to reflect on some of the ins and outs of doing feminist research of science, in this case an ethnographic inquiry into the production of knowledge about gender and the practices of gender studies experts in the Czech Republic. This presentation deals less with the details of my research project itself and more with the process of conducting that research, in particular the ways in which I have come face to face with the issue of researcher-reflexivity and the situatedness of knowledge in relations between the researcher and those whose lives she is researching. As this paper is designed as a talking piece, I hope to stimulate discussion on the politics of doing research among experts and the ways in which personal experience intersects with academic inquiry in ethnographic research.

I will begin by telling a story that made salient for me in a personal way, many of the issues of power, representation, and the ways I am situated within the larger social and political contexts surrounding me and my study, that are often dealt with in scholarship on feminist inquiry.

I was walking down Wenceslas Square in Prague with some friends recently when I got a call on my mobile phone, from a woman who said she was from a local television station. Speaking in Czech rapidly and with confidence, she explained that she wanted to know whether I would be interested in appearing on a programme exploring the meaning of feminism in Czech society. As the woman spoke, I wondered why she was calling me, whether she realised that I was an American, and whether or not I was being manoeuvred into the position of foreign expert or radical Western feminist. When I suggested that I could name several people whom I felt would be better qualified than I was to discuss the topic, she said something noncommittal and stressed that she would like to have me precisely because, given my position as a foreigner who has lived in Prague now for some time, she felt I could provide interesting commentary on the differences between women's positions in the Czech Republic and the United States. I was hesitant to become this sort of representative voice, but she was insistent; I needed more information in order to make a decision, and since she promised to send me the programme details, I promised to consider it by her deadline of two days hence.

I rushed home to contact everyone I knew who had experience with the media to ask for their advice. Most of the Czech colleagues that I consulted urged me to appear on the programme, arguing that I would provide a useful counterweight to the views of the other guests, most of whom they considered to be holders of strange and counter-productive views. Others warned me of the dangers of interacting with the television media, telling or insinuating horror stories of ruthless editing and heated on-air altercations. Another, when asked if she would be interested in appearing with me, replied, “Fuck the mainstream media!” In the end I decided that I felt too uncomfortable with the possibility of being misunderstood or assuming the public role of “American voice” and turned down the opportunity.

This story is indicative of several issues relating to relations between the media and Czech gender studies practitioners, including conflicts over representative voices, which frame contemporary debates about gender and feminism in meaningful ways. I found myself in an unclear position, which I view as indicative of the messy realities of doing ethnographic research; my appearance on television might have had a positive impact, or it could have been a disaster in one of many ways, or in the end it could have been nothing much either way, other than an opportunity for my landlady to mention that she “saw me on TV”.

If we take a bit further the notion of me as a researcher being a part of the networks that make up the expertise that I am studying then certainly my choosing not to participate also has its own set of ramifications. Although it was just one of many interactions, my experience serves as a catalyst for deeper reflection on the importance of seeing myself as a researcher situated as what feminist sociologist Patricia Hill Collins has called an “outsider within” (Collins 2000). While I learned a lot about the feelings of several Czech gender studies practitioners toward media representation, I also found the experience to present a provocative dilemma for me. I may be studying practices of gender expertise in the Czech Republic, but through the (albeit partial) integration into the “gender scene” that ethnographic research demands I am thus also an object of my own ethnographic endeavour. I am an outsider in that I have come in from abroad with the express purpose of examining the production and use of expert knowledge on gender, and the discourses within which this knowledge is deployed. I have also become an insider through necessity, in a way. In order to follow the precepts of my field of study, sociocultural anthropology, I must not passively observe these networks from a distance but rather immerse myself as much as possible in their inner workings. As a result, issues of representation and reflexivity are immediate for me not only in my refusal of objectivity but in my explicitly situated subjectivity as well.

I am a student of anthropology and women’s studies doing research about the lives and work of gender studies practitioners. As part of my immersion into this field site I not only watch, listen and record as an observer, but I also participate in the activities of those around me. As part of this participation, because I happen to be researching something about which I have spent most of my time in higher education studying in some form or another, I am also often called upon to provide assistance or advice. Subsequently, in gaining some tacit knowledge about what it means to ‘do’ gender studies here, I inevitably leave my footprint, however small, upon my object of study.

What to do with this footprint? Throughout anthropology’s history, anthropologists have dealt with this question in one way or another, often, until around 30 years ago, by simply alluding to the position of the researcher, as a colonial official for example, in the introduction of the completed ethnographic account as part of a general discussion of gaining access to the field site. The rest of the ethnography would then be written like an objective study detailing the kinship, political structures, and economic systems of the Nuer of Africa, for example, as a self-contained unit with no discussion of the impact of larger geo-political forces on the ways in which these concepts were themselves being simultaneously constructed (Evans-Pritchard 1940). It was only in professional gossip mills or posthumously published field diaries that the politics of anthropological data collection would become widely known (see, for example, Malinowski 1989). As the gossip goes, "This anthropologist just sat in his tent as a parade of natives came by to fill his books with information…and that one had affairs with several native women while writing about tribal sexual life." Beyond these personal details lurked larger themes. What role did colonial sponsorship contribute to the ways an ethnographer portrayed tribal boundaries, for example? How much could a male anthropologist learn of the lives and rituals of women within a highly sex-segregated society from talking with his male informants? What about the object of anthropological inquiry itself? What to make of the anthropologist "self" travelling from the centre to the periphery to study the 'other' that is 'out there'? Questions such as these caused a huge stir within the field of anthropology as feminist anthropologists, among others, began to interrogate the issues of truth, representation, and power differentials. The oft-asked questions of not only 'how do we know what we know' but, more importantly, 'who knows,' have been shown to have shaken the foundations of anthropology as a discipline and began a tidal wave of debates and experiments in researcher reflexivity that have changed the face of the discipline (see Behar & Gordon 1996, Clifford & Marcus 1986, Code 1991).

The critics, however, level accusations of navel-gazing or over-politicisation when a researcher explicitly situates herself within the story she is telling, not as an objective observer but as an outsider-within. They argue that the researcher has clearly influenced his field of study when he uses his ethnography of crack dealers in Spanish Harlem, for example, to argue for the decriminalisation of drug use (Bourgois 2002). Or they accuse the researcher of contemplating her own navel, as it were, rather than giving that time in the text to the people about whom it is ostensibly written. But despite these criticisms, anthropologists, many of whom believe in explicitly situating themselves with the same care and attention to detail that they use in describing the people whose lives they have immersed themselves in, are in a privileged position in relation to other social sciences in that anthropology has always been a political field, from early attempts at cultural preservation to recent looks at the role of international aid agencies in the construction of the notion of 'need' in several parts of the world (Ferguson 1994). This gives us the benefit of a precedent. My recent experiences in the field have both served to emphasise the relevance of such discussions and demonstrate to me in an immediate and concrete way the complexity of applying these ethical precepts that extend beyond the scope of most journal articles or chapters of methodology books on the subject.

By conducting a critical examination of myself as an object of research I gain insight into a small but indispensable part of a nuanced understanding of my research topic. It seems to me that if I were to avoid this and write only about "them," I would be re-enforcing a false dichotomy between us that would only serve to further mystify the ways in which we are interconnected (albeit in often peripheral ways — I do not wish to overstate the importance of my presence). In the end, the offer to appear on television was a catalyst for me to more seriously reflect upon my position as outside observer of, and involved participant in the production of gender expertise in the Czech Republic in an immediate and personal way.

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Science Studies Opens the Black Box
Spring School of Science Studies Proceedings

Alice Červinková and Kateřina Šaldová (eds.)

Edition: Institute of Sociology of the Academy of Sciences of the Czech Republic,
Jilská 1, 110 00 Prague 1
Print: Ka.Ma s.r.o., Prague 4
First edition
Distribution: Press and Publications Department of the Institute of Sociology of the Academy of Sciences of the Czech Republic
Jilská 1, 110 00 Prague 1, Czech Republic
tel.: 00420 222 221 761
e-mail: sreview@soc.cas.cz

Prague 2006